STATE OF CALIFORNIA
The Resources Agency
Department of Water Resources

BULLETIN No. 177-73

WATERMASTER SERVICE IN NORTHERN CALIFORNIA

1973 SEASON

DECEMBER 1974

NORMAN B. LIVERMORE, JR.
Secretary for Resources
The Resources Agency

RONALD REAGAN
Governor
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FOREWORD

Bulletin No. 177-73 discusses the watermaster service provided by the Department of Water Resources to areas in Northern California during the 1973 watermaster season. Authority to prepare this report is described in the California Water Code, Division 2, Part 4, Chapter 7.

The bulletin is presented in two parts. The first part contains general information about water rights, water supply, service areas, and watermaster duties. The second part contains sections describing the 18 active service areas, 16 in the Department's Northern District and 2 in the Central District. Each of these 18 sections includes descriptions of the general area, the basis of watermaster service, water supply, method of distribution, 1973 distribution, and other significant information for each area.

John R. Teerink

John R. Teerink, Director
Department of Water Resources
The Resources Agency
State of California

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DEPARTMENT OF WATER RESOURCES

RONALD REAGAN, Governor
NORMAN B. LIVERMORE, JR., Secretary for Resources
JOHN R. TEERINK, Director, Department of Water Resources

This report was prepared by the
Northern District
under the direction of

Albert J. Dolcini . . . . . District Engineer
Wayne S. Gentry . . . . . Chief, Operations Branch

by

C. Wesley York . . . . . Chief, Watermaster Service & Hydrology Section
Kenneth E. Morgan . . . . . Assistant Supervising Watermaster

assisted by

Linwood L. Bates . . . . . Watermaster
George H. Pape . . . . . Watermaster
Virgil D. Buechler . . . . . Deputy Watermaster
Charles H. Holmes . . . . . Deputy Watermaster
Lester L. Lighthall . . . . . Deputy Watermaster
William E. Gill, Jr. . . . . Deputy Watermaster
John A. Nolan . . . . . Deputy Watermaster
Edward A. Pearson . . . . . Research Writer
Clifford D. Maxwell . . . . . Senior Delineator
David K. Edwards . . . . . Student Assistant
David A. Waldschmidt . . . . . Student Assistant

Report data and text on the Indian Creek and Middle Fork Feather
River Watermaster Service Areas were furnished by the
Central District

by

M. J. Nessler . . . . . Supervising Watermaster
Harvy A. Jorgenson . . . . . Watermaster
Conrad Lahr . . . . . Deputy Watermaster

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Burney Creek	Burney Creek	21	8	22	4	23
Butte Creek	Ash Creek	11,12			2	14
Butte Creek	Butte Creek	25,26	9,10	26,27	5	29
Campbell Lake	Shackleford Creek	103			14	105
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Carrick Creek	Shasta River	107-109			15,15d	115,119
Cedar Creek	Cow Creek	32			6-6b	34-36
Cedar Creek	S.F. Pit River				16,16c	129,132
Cedar Creek	Surprise Valley	135-138	48	141	13f,17e	97,151
Center Canal	S.F. Pit River				16,16d	129,133
Cleland Springs	Shasta River	109			15h	123
Cliff Lake	Shackleford Creek	103			14	105
Clover Lake	Cow Creek	31,32			6,6e	34,39
S. Clover Creek	Cow Creek				6e	39

* Big Sage Reservoir serves Hot Springs Valley I.D., upstream of Big Valley, but has considerable effect on the water supply to Big Valley.

Watermaster Service Areas in Northern California

Source Name	Service Area	References				
		Text	Flow Data		Map	
		Page	Table	Page	Figure	Page
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Elesian Creek	Susan River	157,158			18,18d	164,167
Emerson Creek	Surprise Valley	135,136,138	54	144	17j	156
Evans Creek	Shackleford Creek	103				
Eyster Slough	Surprise Valley				17i	155
Feather River						
Middle Fork	M.F. Feather River	61,62	18	63	11,11g,11i	64,71,73
West Branch	Butte Creek (Import)	25				
Fitzhugh Creek	S.F. Pit River	125,126	41	128	16,16b	129,131
N.F. Fitzhugh Cr.	S.F. Pit River	125			16b	131
S.F. Fitzhugh Cr.	S.F. Pit River				16b	131
M.F. Fitzhugh Cr.	S.F. Pit River				16b	131
Fletcher Creek	M.F. Feather River	61,62			11k	75
Flood Channel	Susan River				18e	170
Franklin Creek	N.F. Pit River	81-83	25	87	13d	95
French Creek	French Creek	45,46	8	46	8	47
North Fork	French Creek	45			8	47
French Reservoir	S.F. Pit River	125			16b	131
Frenchman Res.	M.F. Feather River	61,62				
Gleason Creek	N.F. Pit River	84			13g	98
Gold Run Creek	Susan River	157-159	56	161	18,18b	164,166
Hahn Channel	Hat Creek				9a	52
Hamlin Creek	M.F. Feather River	62			11j	74
Hamlin Slough	Butte Creek	25			5	29
Hartson Slough	Susan River	157,160			18,18e	164,170
Hat Creek	Hat Creek	49,50	15	50	9-9c	51-54
Hendricks Canal (Also known as Toadtown Canal, Import)	Butte Creek	25	11	27		
Hills Creek	Susan River	157,159			18b	166
Hog Flat Reservoir	Susan River	158,159	59	163	18	164

Watermaster Service Areas in Northern California

Source Name	Service Area	References				
		Text	Flow Data		Map	
		Page	Table	Page	Figure	Page
Payne Reservoir	S.F. Pit River	125			16b	131
Paynes Lake Creek	French Creek	45			8	47
Perry Creek	M.F. Feather River				11e,11f	69,70
Peters Creek	Indian Creek				10b	59
Pine Creek	S.F. Pit River	125,126	42	128	16a	130
Pine Creek	Surprise Valley	135-137	47	141	17d	150
North Channel	Surprise Valley				17d	150
South Channel	Surprise Valley				17d	150
Pine Creek Res.	S.F. Pit River	125			16	129
Pine Creek, New	N.F. Pit River (See New Pine Creek)				14	105
Pit River	Big Valley	15,16	6,7	17	3	18
North Fork	N.F. Pit River	81,83	27	88	13i,13j	100,101
South Fork	S.F. Pit River	125,126	39	127	16,16c,16d	129,133-34
Piute Creek	Susan River	157-159			18,18a	164,165
Plum Canyon Res.	N.F. Pit River				13h	99
Plum Creek	N.F. Pit River				13h	99
Porter Reservoir	N.F. Pit River				13h	99
Rader Creek	Surprise Valley	135,136,138	52	143	17h	154
Rainbow Lake	N.F. Cottonwood Cr.	77			12	79
Rising River	Hat Creek	49			9	51
Roberts Reservoir	Big Valley	15,16			3	19
Round Valley Res.	Indian Creek				10	57
Rush Creek	Ash Creek	11,12			2	14
Rutherford Creek	Surprise Valley	137			17a	147
Shackleford Creek	Shackleford Creek	103,104			14	105
Shasta River	Shasta River	107-111	32,37,38	111,114	15,15a, 15f,15i	115,116, 121,124
Little Shasta R.	Shasta River	107-109	36	113	15,15h	115,123
Lower Shasta R.	Shasta River	108,109	38	114	15i	124
Upper Shasta R.	Shasta River	108			15a	116
Shields Creek	N.F. Pit River		30	80	13h	99
Silver Creek	Cow Creek				6e	39
Slaughter Pole C.	Cow Creek				6e	39

Watermaster Service Areas in Northern California

Source Name	Service Area	References: Text Page	Flow Data: Table	Flow Data: Page	Map: Figure	Map: Page
Sloss Creek	Susan River	157			18,18d	164,169
Smithneck Creek	M.F. Feather River	61,62			11b-11d	66-68
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Middle Channel	M.F. Feather River				11d	68
West Channel	M.F. Feather River				11d	68
Soldier Creek	Surprise Valley	135-137	46	140	17c	149
South Channel	N.F. Pit River (See Davis Creek)					
South Channel	N.F. Pit River (See Franklin Creek)					
South Clover Creek	Cow Creek (See Clover Creek)					
South Deep Creek	Surprise Valley (See Deep Creek)					
S.F. Davis Creek	N.F. Pit River (See Davis Creek)					
S.F. Digger Creek	Digger Creek (See Digger Creek)					
S.F. Pit River	S.F. Pit River (See Pit River)					
Spring Brook	M.F. Feather River				11j	74
Spring Channels	M.F. Feather River	61,62			11k	75
Stony Canyon Creek	N.F. Pit River				13f	97
Susan River	Susan River	157-159	55,57	161,162	18,18a,c	164,166,167
Tanner Slough	Susan River	157			18,18e	164,170
Thoms Creek	N.F. Pit River	81-83	28	88	13f	97
Toadtown Canal	Butte Creek (See Hendricks Canal)					
Town Creek	M.F. Feather River				11e,11f	69,70
Truckee R., Little	M.F. Feather River, Import (See Little Truckee Diversion)					
Tule Canal	Susan River				18e	170
Turner Canyon	M.F. Feather River				11j	74
Turner Creek	M.F. Feather River	62			11j	74
Webber Creek	M.F. Feather River	61,62			11e	69
W. Br. Feather R.	Butte Creek, Import (See Feather River)					
W. Fork Parker Cr.	Susan River (See Parker Creek)					
W. Mill Creek	Surprise Valley (See Mill Creek)					
West Channel	M.F. Feather River (See Smithneck Creek)					
West Side Canal	M.F. Feather River	61,62			11h,11j	72,74
West Side Canal	S.F. Pit River				16,16d	129,133

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Source Name	Service Area	Text Page	Reference: Flow Data Table	Flow Data Page	Map Figure	Map Page
West Valley Creek	S.F. Pit River	127	[illegible]	127	18a	138
West Valley Res.	S.F. Pit River	15,16,125,126			18a	138
Whitehorse Slough	Susan River	157			18e	170
Willow Creek	Ash Creek	11,12			2	14
Willow Creek	Susan River	157-159	56	162	18,18f	164,171
Willow Creek	Willow Creek	172			19	185
Wimer Branch	Surprise Valley				17b	147
Wolf Creek	Indian Creek	55,56			10,10a	97,98
Wyndham Creek	Ash Creek				2e	20

INTRODUCTION

Purpose and Benefits

The primary purpose of watermaster service is to distribute water in accordance with established water rights. This is accomplished by apportioning to the rightful users the available supplies in streams which have had water right determinations.

Distribution of water in watermaster service areas is a continuing statutory function of the Department of Water Resources as provided in Part 5 of Division 2 of the California Water Code.

A major benefit of watermaster service to water users and the State is that court litigation and physical violence, which in past years occurred quite frequently, are essentially eliminated.

Under watermaster service each water right owner is assured that his rights are being protected without his having to take legal action against other users. Another important benefit results from increased use of available supplies through reduction of waste.

Because both the water right owners and the State receive benefits from watermaster service, the costs of performing the service are shared. The State general tax fund pays half the cost of operating each service area. The water right owners in the service area pay the other half. Individual users' shares are determined in accordance with Article 3 of Chapter 7 of the above-mentioned Part 4 of Division 2 of the Water Code.

Determination of Water Rights

Almost all of the streams under state watermaster service have had their water rights defined by the courts under one of three adjudication procedures. These adjudications establish each owner's rights as to allowable rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each owner's rights are ranked in relation to the rights of all other decreed owners. Under this system all rights of any one priority must be fully satisfied before water can be diverted under any lower priority rights. The determinations of the courts are set forth by entering judgments, commonly called decrees.

Water rights determinations necessary for establishing watermaster service areas may be accomplished by "statutory adjudication", "court adjudication", "court reference", permit or license to appropriate, or agreement.

Statutory Adjudications

The California Water Code (Sections 2500-2900) prescribes a procedure whereby water users on any stream may petition the State Water Resources Control Board, Division of Water Rights, to make a legal determination of all water rights on that stream. If the Board finds that such a determination is in the best public interest, it proceeds with a statutory adjudication. This adjudication ultimately results in a court decree which defines all water rights on the stream.

Court Adjudications

A less extensive method of defining water rights is the "court adjudication" procedure. This type of adjudication results when two or more parties involved in a water rights dispute seek a solution to their problem under civil law. A decision handed down in such a civil action determines only the water rights of the parties involved in the action and

therefore does not necessarily define all water rights on the stream. As a result, serious conflicts sometimes arise between decreed water right owners and persons claiming riparian or appropriative rights which were not specified in the decree.

Court Reference

The "court reference" type of adjudication arises when a civil action as discussed above is referred to the State Water Resources Control Board for a determination under authority contained in Sections 2000-2076 of the Water Code. The Board's report becomes the basis of the court's decision. As in court adjudications, a court reference determines only the water rights of the parties involved in the action.

Watermaster Service Areas

Formation

Watermaster service is provided in areas where the rights have been defined by the Superior Court of the County, or by agreement, and where an unbiased qualified person is needed to properly apportion the available water according to the established rights. The Director of Water Resources creates watermaster service areas where these conditions exist, following either a request by the users or an order by the Superior Court.

The first watermaster service areas were created in September 1929. Prior to 1929, some watermaster service was provided in accordance with the Water Commission Act of 1913. There are now about 50 streams in Northern California which are under state watermaster service. The two newest service areas were created in 1972.

The counties and principal water sources of the various service areas in Northern California are listed in Table 4. Of these 20 areas, 18 are in the Department's Northern District, and two in the Central District. In 1973, two service areas in the Northern District, Seiad Creek in Siskiyou County and Pine Creek in Butte and Tehama Counties, were inactive.

Description of Region

The service areas are primarily in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although a considerable amount of land is used exclusively for pasturing livestock. Most irrigation is accomplished by gravity systems, with water users diverting directly from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas.

A map of this region showing the 20 service areas is presented in Figure 1.

Watermaster Responsibilities

Authority

To assure the proper distribution of water within his service area, each watermaster must ascertain the amount of water available and distribute it both by amount and priority in accordance with established water rights. To accomplish his responsibility, the watermaster is provided authority both by the Water Code and by provisions of pertinent court decrees or voluntary agreements to physically regulate the various streams in the service area. He is further authorized to supervise the design, construction, operation, and maintenance

of diversion dams, headgates, and measuring devices.

Each watermaster supervises water distribution at approximately 100 to 200 diversions in one or more service areas. The need for frequently checking and regulating these diversion points increases substantially in years of short water supply.

Control Devices

Permanent measurement and control devices, which the State requires (Water Code Sections 4100-4104) at each owner's main point of diversion, are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service, since once they are built, conflicts among water users almost always stop. Also, the watermaster's ability to check and set each diversion regularly is greatly facilitated by good structures.

Interpretation of Decrees

The watermaster is often called upon to make immediate field or on-the-spot interpretations of various court decrees, agreements, etc. Since most of these documents were written more than 30 years ago, many situations have developed that were not initially considered. Therefore, the watermaster must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this he must possess a good understanding of California water rights law.

Water Supply

Water supply in the watermaster service areas is derived principally from unregulated runoff of small streams. Peak runoff, snowmelt in most cases, occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and ground water pumping are used in some areas to supplement natural streamflow. However, state watermasters do not supervise the use of ground water in this part of the State.

In some service areas the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the manpower needed. The Department's Bulletin 120 series, "Water Conditions in California", is used to assist in these predictions.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the Upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs normally in April, May, and June. Spring storms, which are normally accompanied by relatively cool temperatures, materially affect both the water supply and the demand. Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in years of normal snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Data collected at representative snow courses showing the snowpack as of April 1, 1973, on all courses and the snowpack on May 1 and June 1 at selected courses, is presented in Table 1. This information was obtained from the Department's Bulletin 120-73.

Table 2 reports the quantity of precipitation at selected stations in the service areas during the 1972-73 water year.

The seasonal precipitation gives an indication of the related water supply available for distribution and provides a basis for comparing the current year's supply with a long-term average.

Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by the United States Geological Survey as part of a federal-state program for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by the watermaster in selected diversion ditches to further assist him in proper distribution of the various water right allotments.

Table 3 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 1

SNOWPACK AS OF APRIL 1 AND MAY 1, 1973 AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas (Grouped Geographically)*	Snow Courses* Relating to Each Group	Elevation (in feet)	WATER CONTENT OF SNOW				
			April 1 Average (in inches)	April 1 1973		May 1 1973**	
				In Inches	In Percent of April 1 Average	In Inches	In Percent of April 1 Average
French Creek	Parks Creek	6 700	35.1	38.0	108		
Shackleford Creek	Middle Boulder No 1	6,600	30.7	40.3	131	31.8	104
Shasta River	Little Shasta	6,200	20.0	15.6	78		
Ash Creek	Blue Lake Ranch	6,800	10.3	14.4	140		
Big Valley	Eagle Peak	7,200	15.5	18.0	116		
North Fork Pit River	Cedar Pass	7,100	16.6	19.0	114	16.9	102
South Fork Pit River	Adin Mountain	6,350	13.6	14.1	104	3.0	22
Surprise Valley							
Burney Creek	Thousand Lakes	6,500	36.4	34.4	95	22.2	61
Cow Creek	New Manzanita Lake	5,900	7.4	15.3	207	0.4	5
Digger Creek	Burney Springs	4,700	2.6	4.2	162		
Hat Creek							
Butte Creek	Humbug Summit	4,850	11.6	25.4	223		
Susan River	Silver Lake Meadows	6,450	28.4	32.9	116	22.6	80
	Fredonyer Pass No. 1	5,750	8.7	10.6	122		
Indian Creek	Independence Lake	8,450	41.3	43.9	106		
Middle Fork Feather River	Mount Oyer No. 1	7,100	24.9	28.2	113	23.8	96
	Rowland Creek	6,700	17.9	17.6	98	8.9	50
	Yuba Pass	6,700	30.0	33.4	111	17.7	59

* Snow courses are listed in order of elevation within each geographical group of watermaster service areas.

** Data collected only at stations listed.

TABLE 2

PRECIPITATION AT SELECTED STATIONS - 1972-73 SEASON

Station Name	County	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Total	Percent Of Mean
Fort Jones Ranger Station	Siskiyou	0 66	1 77	6 15	4 17	6 92	0 86	0 76	0 34	0 00	0 02	T	1 71	23 18	106
		1 59	2 77	4 02	4 09	3 14	2 21	0 98	1 11	0 81	0 35	0 34	0 40	21 78	
Happy Camp Ranger Station	Siskiyou	0 00	4 63	10 71	10 30	3 62	4 31	0 50	0 32	0 06	0 04	0 00	2 33	36 82	67
		4 07	7 25	10 41	11 31	6 24	6 45	2 72	2 16	1 06	0 38	0 17	0 74	54 86	
Yreka	Siskiyou	0 52	1 06	3 78	2 27	0 70	0 75	0 30	0 68	T	0 47	0 01	1 12	11 88	67
		1 45	2 00	3 30	3 19	2 29	1 61	0 92	1 03	0 86	0 27	0 39	0 45	17 76	
Chico Experimental Station	Butte	2 28	6 76	4 36	10 58	7 71	4 49	0 01	0 00	0 17	0 00	0 00	0 16	36 52	140
		1 46	2 41	5 12	5 03	4 43	3 29	2 31	1 16	0 44	0 01	0 07	0 33	26 06	
Redding Fire Station No 2	Shasta	3 03	7 71	6 12	12 21	6 85	4 21	0 11	0 84	0 00	0 00	0 00	1 19	44 37	114
		2 27	3 76	7 26	7 69	6 18	4 90	2 85	1 74	1 31	0 11	0 13	0 81	38 82	
Hat Creek Power House No 1	Shasta	1 77	3 02	2 26	4 38	2 55	1 29	0 47	0 60	0 18	0 04	0 00	0 53	17 09	85
		1 30	1 83	2 93	2 85	2 84	2 02	1 35	1 26	0 77	0 28	0 16	0 47	18 06	
Lookout 39S8	Lassen	1 36	3 18	2 07	3 96	1 60	0 82	0 86	0 77	0 00	0 67	0 01	1 29	16 57	64
		1 97	3 54	5 31	8 25	1 21	1 90	1 73	1 18	1 85	0 11	0 46	0 47	26 08	
Lakeview Oregon	Lake	1 52	2 35	2 34	1 38	1 15	1 84	0 87	0 88	0 02	0 18	0 33	1 47	14 33	98
		1 21	1 37	1 86	1 84	1 71	1 52	1 15	1 51	1 28	0 22	0 17	0 56	14 44	
Alturas Ranger Station	Modoc	0 87	1 71	1 03	1 48	0 56	0 57	1 61	0 68	0 00	0 01	0 00	0 65	9 18	72
		1 07	1 35	1 83	1 62	1 45	1 37	1 03	1 31	1 03	0 31	0 22	0 43	12 82	
Jess Valley	Modoc	0 00	2 67	1 56	2 74	0 51	2 36	2 01	1 71	0 10	0 16	0 03	1 11	14 88	87
		1 31	1 66	1 92	1 89	1 95	1 66	1 64	2 02	1 62	0 41	0 26	0 66	17 72	
Cedarville	Modoc	0 69	1 68	1 59	2 14	0 91	1 72	1 01	0 81	0 11	0 03	T	0 04	11 63	90
		1 17	1 41	1 69	1 84	1 50	1 45	0 99	1 04	0 94	0 33	0 15	0 37	12 88	
Susanville Airport	Lassen	2 47	1 92	1 39	3 66	2 06	1 07	0 00	0 77	0 00	0 02	0 47	0 27	14 10	97
		0 92	1 51	2 56	2 53	2 51	1 51	0 62	0 63	0 67	0 18	0 09	0 35	14 48	
Greenville Ranger Station	Plumas	3 70	5 29	1 87	11 27	8 46	1 52	0 71	0 66	0 08	0 52	0 42	1 22	35 67	83
		2 91	4 81	5 93	6 89	7 44	6 47	2 84	1 71	0 75	0 35	0 21	0 95	47 96	
Sierraville Ranger Station	Sierra	1 85	3 44	3 95	7 14	4 02	1 31	0 23	0 72	0 60	0 24	0 91	0 25	24 86	98
		1 83	2 76	4 49	4 94	4 23	2 84	1 63	1 25	0 54	0 29	0 15	0 44	25 30	
Vinton	Plumas	1 29	1 79	1 46	2 42	1 90	0 75	0 22	1 58	0 32	0 27	0 36	0 07	12 16	95
		0 89	1 44	2 12	1 94	1 87	1 43	0 84	1 01	0 50	0 36	0 18	0 25	12 83	

Note: Figures above line are for current season, below line are long-term averages

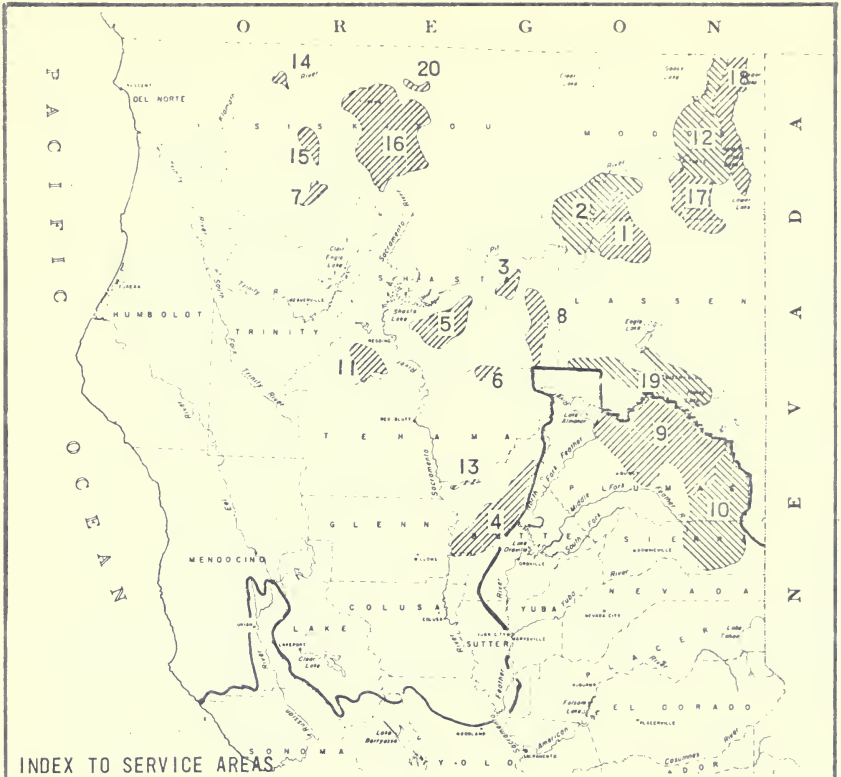
TABLE 3

RUNOFF AT SELECTED STATIONS - 1972-73 SEASON (IN ACRE-FEET)

Station	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Total	Average 1/	Percent Average
Shasta River near Yreka	8 330	11 080	13 710	14 060	11 830	10 980	4 510	4 020	1 670	1 230	986	3 300	86 680	132 600	65
Hat Creek near Hat Creek	9 630	9 030	9 180	9 110	8 090	8 960	9 260	14 300	11 900	9 260	8 950	8 540	116 300	98 980	118
Pit River near Canby	8 990	8 470	10 850	14 280	17 790	16 500	23 160	23 540	5 850	2 470	3 040	4 510	137 500	180 400	76
South Fork Pit River near Likely	2 550	2 720	2 790	2 780	2 460	3 150	5 820	18 720	7 810	7 760	9 460	4 760	70 800	56 730	125
Susan River at Susanville	1 240	1 280	2 800	3 960	3 200	6 550	10 920	7 700	4 450	5 700	343	445	48 380	70 860	68
Indian Creek near Crescent Mills	5 660	9 930	16 800	43 180	41 330	52 080	63 820	51 080	6 560	2 220	1 450	1 780	317 900	399 200	80
Middle Fork Feather River near Clio	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Butte Creek near Chico	6 540	18 060	19 330	64 970	63 950	55 480	37 060	35 170	16 000	11 410	8 530	7 720	346 700	292 700	118

1/ Long-term average

* Data unavailable



INDEX TO SERVICE AREAS

1 Ash Creek
2 Big Valley
3 Burney Creek
4 Butte Creek
5 Cow Creek
6 Digger Creek
7 French Creek
8 Hat Creek
9 Indian Creek
10 Middle Fork Feather River
11 North Fork Cottonwood Creek
12 North Fork Pit River
13 Pine Creek (inactive)
14 Selad Creek (inactive)
15 Shackleford Creek
16 Shasta River
17 South Fork Pit River
18 Surprise Valley
19 Susan River
20 Willow Creek

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

WATERMASTER SERVICE AREAS IN NORTHERN CALIFORNIA

TABLE 4

WATERMASTER SERVICE AREAS AND STREAM SYSTEMS

Service Area	County	Principal Water Sources: MAJOR STREAM and Tributaries [a]	Principal Water Sources: Reservoirs and Nontributary Streams
Ash Creek	Lassen, Modoc	ASH CREEK	
Big Valley	Lassen, Modoc	PIT RIVER	Roberts Reservoir
Burney Creek	Shasta	BURNEY CREEK	
Butte Creek	Butte	BUTTE CREEK	W. Branch Feather River
Cow Creek	Shasta	COW CREEK [b] N. Cow, Clover, Oak Run Creeks	
Digger Creek	Shasta, Tehama	DIGGER CREEK	
French Creek	Siskiyou	FRENCH CREEK Miners Creek	Duck Lake, Paynes Lake
Hat Creek	Shasta	HAT CREEK	
Indian Creek	Plumas	INDIAN CREEK Lights Creek, Wolf Creek	
Middle Fork Feather River	Plumas, Sierra	M. FORK FEATHER RIVER Little Last Chance, Smithneck, Webber and Fletcher Creeks; Spring Channels, Westside Canal	Little Truckee River
N. Fork Cottonwood Creek	Shasta	N. FORK COTTONWOOD CREEK	Rainbow Lake
North Fork Pit River	Modoc	N. FORK PIT RIVER Parker Creek	Pine, Cottonwood, Davis Creeks
Pine Creek [c]	Butte, Tehama	PINE CREEK	
Seiad Creek [c]	Siskiyou	SEIAD CREEK	
Shackleford Creek	Siskiyou	SHACKLEFORD CREEK Mill Creek	Campbell and Cliff Lakes
Shasta River	Siskiyou	SHASTA RIVER Little Shasta River	Dwinnell Reservoir (Lake Shastina)
South Fork Pit River	Modoc	S. FORK PIT RIVER Pine and Fitzhugh Creeks	West Valley Reservoir
Surprise Valley	Modoc	NONE (All creeks listed at right, are unconnected)	Bidwell, Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, Eagle and Emerson Creeks
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks
Willow Creek	Siskiyou	WILLOW CREEK	

[a] Major tributaries only A complete listing is given in " Index to Water Sources" page vii

[b] Cow Creek proper not in service area

[c] Inactive in 1973

SERVICE AREA DESCRIPTIONS AND 1973 NARRATIVES

This portion of the report consists of 18 sections, one for each service area active in 1973, presented in alphabetical order.

Each of these sections begins with a description of the particular service area, including location, geography, and general characteristics. Following this is a section entitled "Basis of Service". Under this heading are presented such data as the case number, date, and type of decrees; a brief summary of the decree or agreement which defines the water rights; the date the service area was created; and other related information.

These sections of the bulletin also present data on the water supply, methods of distribution, significant events of the watermaster season, and daily streamflow records. A map or schematic sketch of the stream system, including diversion locations, roads, etc., is also included for each service area.

A noticeable trend in recent years is the increasing number of water right owners in many areas, due to subdividing or "splitting" of property. For example, in the Ash Creek service area the number has increased from 32 in 1967 to 59 in 1972, practically doubling in 5 years. This trend not only causes more work for the individual watermasters, but makes it difficult to maintain up-to-date records of all ownerships and their respective water rights. The water right ownerships are updated as of March 1 each year from County Assessors' records. Changes not on record by March 1 are therefore not reflected on the service area maps included in the various sections.

Since the purpose of this bulletin is to report the activities of the watermaster service, and because of the difficulty in keeping the data current, nothing herein should be construed as a determination of water rights. Furthermore, in some service areas there are diversions which may have been active but are not shown on the maps because they did not require the watermaster's attention during 1973.

As in previous years, watermaster service was begun on different dates in the various areas depending upon the streamflow conditions, the ranchers' needs for the water, or, as on some streams, the terms of the decree. Service was continued in all areas through the growing season and concluded on September 30, 1973.

The date service was started in each service area and the name of the watermaster in charge are listed on the following page.

Service Area	Date Service Began in 1973	Watermaster
Ash Creek	May 1	John Miller, L. L. Bates
Big Valley	April 29	Virgil D. Buechler
Burney Creek	June 1	John A. Nolan
Butte Creek	April 18	Kenneth E. Morgan
Cow Creek	June 1	John A. Nolan
Digger Creek	July 1	John A. Nolan
French Creek	July 1	George E. Pape
Hat Creek	April 29	Virgil D. Buechler
Indian Creek*	April 5	Harvey M. Jorgenson
M.F. Feather River*	April 1	Conrad Lahr, H. Joe Nessler
N.F. Cottonwood Creek	July 1	John A. Nolan
N.F. Pit River	April 16	Charles H. Holmes
Shackleford Creek	June 1	George E. Pape
Shasta River	April 6	George E. Pape
S.F. Pit River	April 1	John Miller, L. L. Bates
Surprise Valley	March 19	William E. Gill, Jr.
Susan River	April 1	Lester L. Lighthall
Willow Creek	June 6	George E. Pape

* Within Central District; all others in Northern District

ASH CREEK WATERMASTER SERVICE AREA

The Ash Creek service area is situated in Modoc and Lassen Counties near the town of Adin, about 100 miles northeast of Redding via Highway 299. Figure 2, page 14, shows the Ash Creek stream system and diversions, plus the roads in the area.

The major sources of water for the service area are Ash Creek and three tributaries, Willow, Rush, and Butte Creeks. Ash Creek rises in Ash Valley in the southeastern part of the service area and flows northwesterly about 18 miles to its confluence with Rush Creek, then southwesterly to the town of Adin, and then westerly to Ash Creek Swamp and the Pit River. Butte and Willow Creek head in the mountains to the east and flow northwesterly into Big Valley. Butte Creek meets Ash Creek near the head of the valley at Adin and Willow Creek about 3 miles farther west near the head of Ash Creek Swamp. The valley floor in this vicinity is at an elevation of approximately 4,200 feet.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 3670, Modoc County Superior Court, dated October 27, 1947. From 1940 through 1958 Ash Creek was included as a part of Big Valley watermaster service area. The Ash Creek watermaster service area was created April 3, 1958.

There are 50 water users in the service area with water rights totaling 123.65 cubic feet per second. Approximately 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The remaining water rights are along the upstream tributaries and in Ash Valley, east of the town of Adin. The portion of Big Valley served is approximately 10 miles long by 6 miles wide, extending from the town of Adin to the confluence of Ash Creek and the Pit River.

The Ash Creek decree establishes the number of priority classes on the individual streams within the service area as follows: Ash Creek - five; Willow Creek - four; Rush Creek - one; and Butte Creek - two. Each of these streams is independently regulated.

Water Supply

The water supply for Ash and Rush Creeks is derived primarily from snowmelt, since most of the watershed is between 5,000 and 6,000 feet in elevation. Willow Creek and Butte Creek receive a substantial portion of their water from springs. These creeks normally have sufficient water to satisfy demands until about June 1, after which the supply decreases rapidly. By the latter part of June, Ash Creek normally has receded to about 20 cubic feet per second, Willow Creek to about 5 cubic feet per second, and Butte Creek to less than 1 cubic foot per second. The flow of these creeks then remains nearly constant for the remainder of the season.

Method of Distribution

Irrigation diversions from Ash Creek and its tributaries are accomplished by small dams placed in the stream channels. Most of the users have several diversion ditches at these dams. These ditches convey the water to the fields where it is spread by means of small laterals. Wild flooding is the predominant method of irrigation, but checks and borders are used to spread the water on some ranches. In a few areas, pumps are used to divert the water into ditches or through sprinkler systems. Return flow is rediverted for use on downstream ranches. In one case a rancher may recirculate his drain water before returning it to the creek for reuse.

1973 Distribution

Watermaster service began May 1 and continued until September 30. John M. Miller, Water Resources Technician II, was watermaster for the period May 1 through May 31. The watermaster for the remainder of the season was L. L. Bates, Water Resources Engineering Associate.

Ash Creek. The available water supply in Ash Creek was sufficient to meet all demands (five priorities) until the latter part of June. For most of the remainder of the irrigation season, water was available for first priority allotments only.

The daily mean discharge of Ash Creek at Adin is presented in Table 5, page 12. This stream gaging station is downstream from a substantial number of the diversions; consequently, flows reported do not include all of the available supply of this creek.

Rush Creek. The available water supply in Rush Creek was sufficient to satisfy all allotments (one priority) until the end of July. By late September the flow had gradually decreased to about 80 percent of these allotments.

Willow Creek. The available water supply in Willow Creek was sufficient to satisfy all allotments (four priorities) until the first of June. The flow then dropped rapidly, causing regulation of second priority allotments to begin during the first week in June. Throughout the remainder of June and continuing until late August, the flow receded gradually. At this time, and for the remainder of the season, about 50 percent of the second priority allotments were served.

Butte Creek. The available water supply in Butte Creek was sufficient to satisfy all allotments (two priorities) until late spring. During the remainder of the season the flow gradually decreased; however, no distribution problems were encountered.

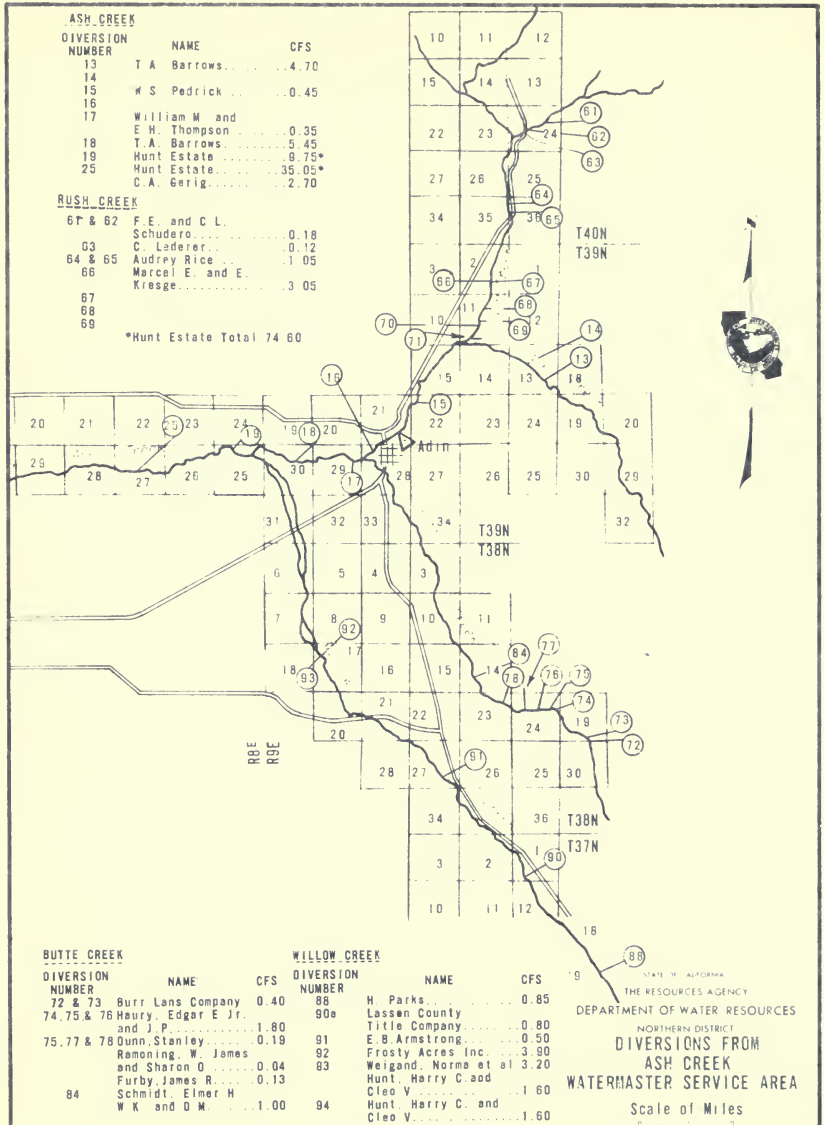
ASH CREEK WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 5

ASH CREEK AT ADIN

Day	March	April	May	June	July	August	September	Day
1	166	96	85	28	15	20	11	1
2	145	94	78	23	16	20	12	2
3	135	90	75	20	15	20	13	3
4	126	92	82	18	14	19	14	4
5	108	93	90	18	14	19	13	5
6	104	95	79	18	16	20	13	6
7	97	103	74	17	16	20	14	7
8	93	110	67	17	16	20	14	8
9	93	110	63	16	18	20	15	9
10	118	109	60	16	14	20	15	10
11	235	109	56	17	14	20	15	11
12	187	109	53	16	16	20	15	12
13	173	108	39	17	19	20	16	13
14	140	121	39	16	17	20	17	14
15	136	134	37	13	16	20	18	15
16	139	129	41	17	17	20	18	16
17	127	141	37	18	18	20	18	17
18	108	131	33	19	17	20	18	18
19	105	122	32	17	31	20	22	19
20	104	114	28	15	27	20	32	20
21	100	106	28	15	22	20	23	21
22	103	104	26	15	22	15	23	22
23	107	103	24	16	21	9.8	29	23
24	97	104	28	17	21	13	30	24
25	100	106	44	15	21	18	33	25
26	98	105	36	15	20	22	24	26
27	99	108	31	15	21	22	21	27
28	93	110	23	14	21	20	19	28
29	91	102	18	15	21	17	20	29
30	99	92	20	15	21	14	20	30
31	108		25		21	11		31
Mean	120	108	46.8	16.9	18.7	18.7	18.8	Mean
Runoff In Acre-Feet	7406	6446	2878	1008	1146	1150	1121	Runoff In Acre-Feet


ASH CREEK
DIVERSION NUMBER
NAME
CFS
13 T A Barrows 4.70
14
15 W S Pedrick 0.45
16
17 William M and E H. Thompson 0.35
18 T.A. Barrows 5.45
19 Hunt Estate 8.75*
25 Hunt Estate 35.05*
C.A. Gerig 2.70
RUSH CREEK
61 & 62 F.E. and C L. Schudero 0.18
63 C. Lederer 0.12
64 & 65 Audrey Rice 1 05
66 Marcel E. and E. Kresge 3 05
67
68
69
*Hunt Estate Total 74 60
T40N
T39N
T39N
T38N
T38N
T37N
R8E
R9E
Adin
BUTTE CREEK
DIVERSION NUMBER
NAME
CFS
72 & 73 Burr Lans Company 0.40
74,75,& 76 Haury, Edgar E Jr. and J.P. 1.80
75,77 & 78 Dunn, Stanley Ramoning, W. James and Sharon O. 0.04
Furby, James R. 0.13
84 Schmidt, Elmer H W K and D M 1.00
WILLOW CREEK
DIVERSION NUMBER
NAME
CFS
88 H. Parks 0.85
90a Lassen County Title Company 0.80
91 E.B.Armstrong 0.50
92 Frosty Acres Inc. 3.90
83 Weigand, Norma et al 3.20
Hunt, Harry C.and Cleo V 1 60
94 Hunt, Harry C. and Cleo V. 1.60
Permanent Recorder Station (DWR-Ash Creek at Adin)
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM ASH CREEK WATERMASTER SERVICE AREA
Scale of Miles

Big Valley Watermaster Service Area

The Big Valley service area is in Modoc and Lassen Counties in the vicinity of the towns of Lookout and Bieber, about 90 miles northeast of Redding via State Route 299.

The Pit River is the major source of water regulated by the watermaster. The river enters the valley north of the town of Lookout and flows southerly through the western part of the valley and out at the southern end. The major area of use is about 13 miles of valley floor, up to 6 miles wide, along the Pit River at an approximate elevation of 4,200 feet.

A map of the Big Valley stream system with towns, roads and diversions is presented as Figure 3, pages 18 and 19.

Basis of Service

The water rights in this service area were set forth in Decree No. 6395, Modoc County Superior Court, a statutory decree, dated February 17, 1959. The Big Valley watermaster service area was created in November 13, 1934, and service began with the 1935 season, operating under an agreement recorded in 1934.

Distributing the water on a continuous-flow basis, as provided by the decree, has proven impracticable because of the wide variation of flow which frequently occurs. By mutual agreement, an alternative procedure has been established allowing each user a definite amount of water in acre-feet (AF) for each cubic foot per second (cfs) of right allotted by the decree. The watermaster estimates the amount of water available for the next 15 to 30 days and then chooses the appropriate acre-foot/cfs ratio so that the rotation through the valley is completed in not more than 30 days.

There are 58 water users in the service area with total rights of 241.82 cfs, of which 154.23 cfs are second priority, 29.59 cfs third priority, and 43 cfs fourth priority, with 15 cfs set aside for first priority (stock water and channel storage). Under the decree, the water rights were determined on a basis of 1 cfs per 70 acres of irrigable land.

Water Supply

The flow in the Pit River at the head of Big Valley is derived principally from direct runoff, mainly snowmelt, and return flow from irrigation water released from West Valley and Big Sage Reservoirs above South Fork Pit River and Hot Springs Valleys, respectively.

The available water supply in the Pit River as it flows through Big Valley is ordinarily adequate to satisfy all demands until about June 1. The irrigation practices in Hot Springs Valley, about 20 miles upstream from Big Valley, have a significant effect on the available water supply in Big Valley throughout the remainder of the irrigation season. Water users in Hot Springs Valley divert most of the flow of the Pit River for 2- or 3-week periods. Natural flow available for use in Big Valley during these periods is often less than 20 cfs. Periodic releases from channel storage in the lower end of the valley sometimes increase the flow to as much as 200 to 300 cfs for relatively short periods. Consequently, equitable water distribution in Big Valley is very difficult to attain.

Roberts Reservoir, which stores runoff of a minor tributary of the Pit River at the upper end of Big Valley above Lookout, serves as a supplemental source of water to those users in the area who are members of the Big Valley Mutual Water Company. Water from this reservoir is released into the Pit River and distributed to members of the water

company along with the natural flow to which they are entitled.

Records of two stream gaging stations in the Big Valley service area are presented in Tables 6 and 7, page 17.

Method of Distribution

Most water users in the Big Valley service area irrigate on a rotation schedule either by wild flooding or by checks and borders. Large flashboard dams placed in the channel make it possible to use the large heads of water characteristic of the supply in the area. In addition, some pumps are used for diversion, both in ditches and directly into sprinkler systems. The ranches which irrigate by wild flooding must use large heads of water in order to cover unleveled or high ground. Much of the runoff is recaptured for use by downstream lands, resulting in a relatively high irrigation efficiency for the valley.

1973 Distribution

Watermaster service began in the Big Valley service area on April 29 and continued through September 30, with Virgil D. Buechler, Water Resources Technician II, as watermaster.

The season began with Big Sage and West Valley Reservoirs at capacity. The spring season was very dry with north winds blowing throughout May.

Big Valley seemed to be in a dry area. Rains occurred all around the valley, but not in it. Roberts Reservoir barely filled and Iverson Reservoir never did spill. The flows in the Pit River at Canby averaged approximately 45 cubic feet per second July through September.

The ranchers irrigated on full irrigation rotations through June 22, when the middle users stopped irrigating in preparation for the haying process. The pumpers and lower users irrigated through July 22, and then began haying.

The critical irrigation rotation was started on a 5 AF/cfs of water right basis on July 22, and completed on August 6. The second irrigation rotation of 10 AF/cfs was completed August 26. The third irrigation rotation of 12.5 AF/cfs was completed September 10. The fourth rotation was on a 100 percent basis, or a full irrigation.

Water was delivered from Roberts Reservoir as follows:

User	Acre-Feet
Hunt Estate	174
C. Mamath	99
S. Gerig	158
C. Kramer	198
N. Gerig	128
D. Babcock, D. Hawkins	294
M. Kennedy	90
Total	1,141

Iverson Reservoir shareholders used 70 percent of their storage to supplement their irrigations.

Special Occurrences

Two new Sparling meters were installed on the Watson and Oilar Ditches; repair work is scheduled on Roberts Reservoir Dam, spillway, and outlet works; and a new diversion and Sparling meter are scheduled for installation on the Herb Hayes diversion.

BIG VALLEY WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 6

PIT RIVER NEAR CANBY

Day	March	April	May	June	July	August	September	Day
1	301	300	375	266	112	38	78	1
2	297	318	420	260	62	36	66	2
3	259	332	370	218	17	43	73	3
4	236	380	196	216	17	45	69	4
5	212	360	216	217	27	40	66	5
6	207	340	385	202	32	36	62	6
7	196	355	470	189	38	32	60	7
8	189	360	430	111	23	24	62	8
9	179	340	365	102	34	24	64	9
10	182	370	322	93	32	24	62	10
11	228	390	430	55	24	29	62	11
12	365	380	345	40	22	45	58	12
13	400	390	360	66	18	47	55	13
14	365	435	380	66	15	51	51	14
15	292	455	430	69	16	55	49	15
16	275	548	480	115	18	64	47	16
17	350	486	425	109	22	62	55	17
18	389	523	385	51	17	47	64	18
19	332	537	355	78	15	40	66	19
20	283	486	330	69	13	38	73	20
21	250	420	345	47	12	42	83	21
22	250	370	355	34	11	100	116	22
23	271	296	368	32	43	96	96	23
24	292	283	379	22	139	64	97	24
25	275	292	394	29	169	49	124	25
26	254	318	377	47	99	43	104	26
27	247	370	493	40	60	45	95	27
28	247	405	539	13	29	64	115	28
29	231	425	416	15	43	69	108	29
30	231	405	406	80	31	69	92	30
31	254		328		34	73		31
Mean	268	389	383	98.4	40.2	49.5	75.7	Mean
Runoff In Acre-Feet	16500	23150	23540	5850	2470	3040	4510	Runoff In Acre-Feet

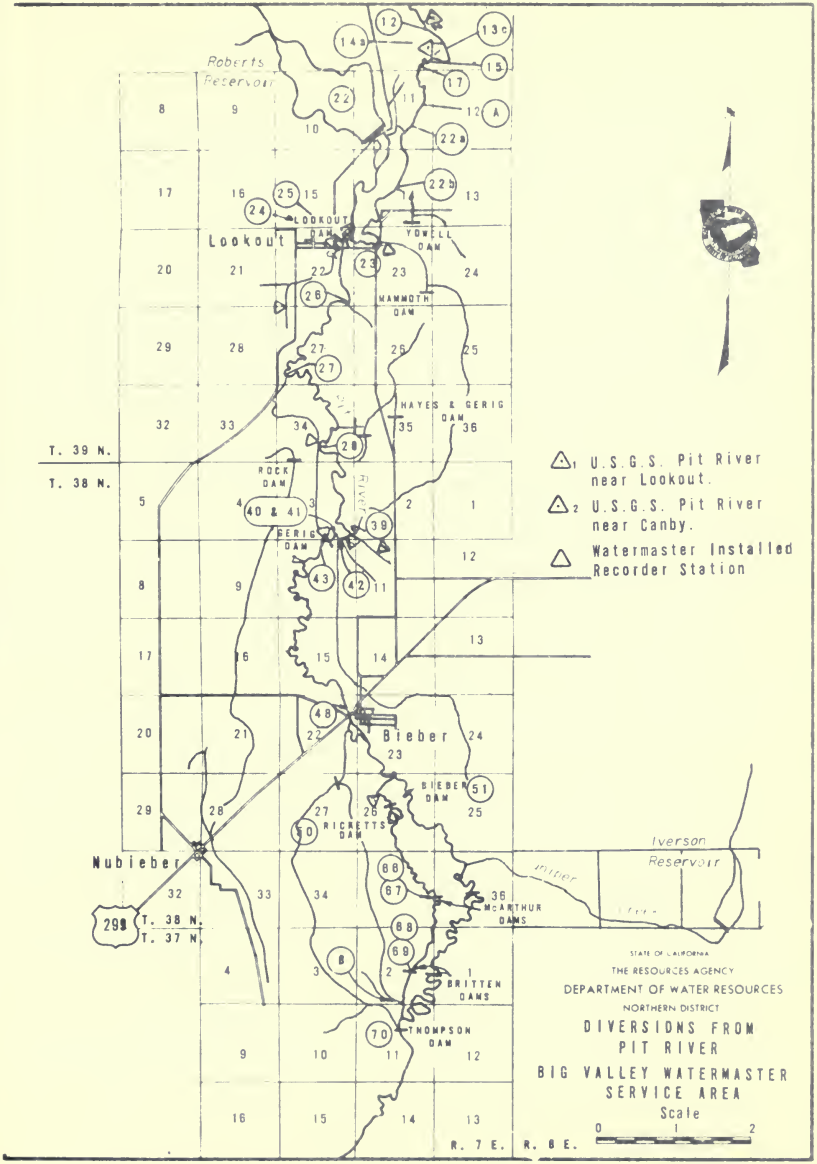
TABLE 7

PIT RIVER NEAR BIEBER

Day	March	April	May	June	July	August	September	Day
1	921	450	426	410	1.1	0.9	0.0	1
2	886	470	362	334	1.0	1.0	0.0	2
3	795	478	272	292	1.6	1.5	7.2	3
4	694	478	194	285	20	16	10	4
5	615	535	161	158	30	10	5.6	5
6	545	545	111	173	12	6.8	3.0	6
7	500	520	264	134	4.0	4.0	1.9	7
8	466	510	500	96	2.5	1.3	1.3	8
9	438	520	555	126	7.6	0.8	1.1	9
10	450	510	510	67	12	0.6	1.6	10
11	595	520	446	103	12	0.9	2.3	11
12	718	550	342	113	6.0	1.9	1.2	12
13	900	555	316	76	3.3	6.4	1.0	13
14	844	555	285	38	1.9	8.4	1.2	14
15	774	600	358	14	1.3	14	2.8	15
16	640	646	430	6.4	1.1	20	1.8	16
17	585	742	402	4.0	1.8	3.0	1.2	17
18	610	742	382	3.3	5.6	0.8	0.8	18
19	625	724	386	4.0	11	0.4	0.8	19
20	590	748	370	5.6	36	0.2	1.0	20
21	540	676	386	1.9	24	0.0	1.1	21
22	490	605	398	2.1	14	0.0	2.1	22
23	462	535	211	3.6	7.6	0.0	2.5	23
24	466	466	253	6.8	4.8	0.0	2.8	24
25	495	430	410	4.4	3.0	0.0	6.0	25
26	510	426	490	2.8	2.3	0.0	13	26
27	490	434	394	1.9	1.8	0.0	28	27
28	466	466	259	1.5	1.5	0.0	14	28
29	442	495	459	1.6	1.3	0.0	15	29
30	434	446	550	1.1	1.2	0.0	18	30
31	438		630		1.0	0.0		31
Mean	594	546	371	82.3	7.6	3.2	4.9	Mean
Runoff In Acre-Feet	36540	32480	22830	4900	465	196	284	Runoff In Acre-Feet

DIVERSIONS FROM
PIT RIVER
BIG VALLEY WATERMASTER SERVICE AREA

DIVERSION NUMBER	NAME	CFS	ACRE FEET
	First priority for the entire river is to maintain channel storage and stock water.	15.00	
12	Ebersale (pump)	3.02	
12c	Duncan	2.86	
14a	Gould	1.20	
15	Hines Brothers	7.26	
17	Barnett	6.98	
22	Roberts Reservoir Water Rights ---------- Total		5500
	N. Gerig 5 shares		
	O. Gerig 3 shares		
	D. Babcock 3 shares		
	L.W.Kramer 2 shares		
	Hunt Estate 2 shares		
	M.Kennedy 1 share		
	C.Mamath 1 share		
	C.Hawkins 1 share		
	L.Manchamp 1 share		
	Elcholz 1 share		
22a	Munchamp	1.73	
22b	Bibbens	4.10	
23	Three Corners Diversion ---------- Total	18.47	
	Mamath	3.83	
	Hunt Estate	6.30	
	Hayes	3.37	
	S.Gerig	4.97	
24	Lookout Dam		
25	Oilar Ditch ---------- Total	15.69	
	Elcholz	11.35	
	Leventon	4.34	
26	Downey (pump)	3.48	
27	Potter(pump)	5.36	
28	Fulcher Ditch ---------- Total	15.28	
	Kramer	5.24	
	Holl	4.22	
	Knox Ranch (N.Gerig)	4.22	
38	Ash Creek Pipe		
40	N.Gerig	8.17	
42	Watson Ditch ---------- Total	3.04	
	D.Babcock	2.23	
	C.Hawkins	0.81	
43	Gerig Dam		
48	Babcock Pipes ---------- Total	31.67	
	Snipes	1.61	
	Kennedy	2.51	
	J.McArthur	7.28	
	Babcock Brothers	14.34	
	S.J.&W.H.Thompson	3.21	
	W.Druwry	2.72	
50	Ricketts Dam		
51	Bieber Dam		
66 & 67	McArthur Dam	12.14	
68 & 69	Britten Dam	11.23	
70	Thompson Dam	11.50	
A	Hallmark Pump	1.77	
B	Campbell Dam	1.28	


Roberts Reservoir
Lookout
LOOKOUT DAM
YOWELL DAM
MAMMOTH DAM
HAYES & GERIG DAM
ROCK DAM
GERIG DAM
PIT RIVER
Bieber
BIEBER DAM
RICKETTS DAM
Nubieber
Iverson Reservoir
McARTHUR DAMS
BRITTEN DAMS
THOMPSON DAM
T. 39 N.
T. 38 N.
T. 37 N.
R. 7 E.
R. 8 E.
299
△1 U.S.G.S. Pit River near Lookout.
△2 U.S.G.S. Pit River near Canby.
△ Watermaster Installed Recorder Station
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM PIT RIVER
BIG VALLEY WATERMASTER SERVICE AREA
Scale
0 1 2

Burney Creek Watermaster Service Area

The Burney Creek service area is in eastern Shasta County above and below the town of Burney. Figure 4, page 23, shows the Burney Creek stream system including the diversions and roads.

The source of water supply for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The portion of the valley served by this stream is approximately 11 miles long and 2 miles wide, and extends both north and south of Burney. The service area is approximately 3,200 feet in elevation.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 5111, Shasta County Superior Court, dated January 30, 1926. Watermaster service was provided on the creek from 1926 to 1929 under the old Water Commission Act. The service area was created, along with some others, on September 11, 1929, under a new law passed in that year.

The Burney Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz Ditch is distributed in accordance with supplemental court decrees.

There are 10 water right owners in the area with total allotments of 33.09 cubic feet per second.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 4,000 and 7,500 feet on the northeast slopes of Burney Mountain. The creek normally has sufficient water to supply all demands until about the middle of June. The supply then gradually decreases until the end of July. For the remainder of the irrigation season, runoff from perennial springs keeps the flow nearly constant at approximately 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 8, page 22. The stream gaging station on Burney Creek is downstream from four points of diversion; consequently, the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from Burney Creek, in most cases by means of low diversion dams, into ditches which convey it to the place of use. Lateral ditches are then used to irrigate the land.

1973 Distribution

Watermaster service began June 1 in the Burney Creek service area and continued until September 30. John A. Nolan, Water Resources Technician II, was the watermaster.

By agreement of the water right owners, all allotments were distributed on a continuous-flow basis rather than on the rotation basis called for in the decree.

The Pierpont Ranch, at the lower end of the service area, did not irrigate during the 1973 season. Therefore, except for stock water delivered to the ranch, its share of the available water was apportioned among the other users.

The available water supply for the 1973 irrigation season was about normal.

Surplus flow was available to all users until early July. All diversions were then regulated to 100 percent of first priority allotments. The supply gradually decreased to about 60 percent of first priority allotments during mid-August.

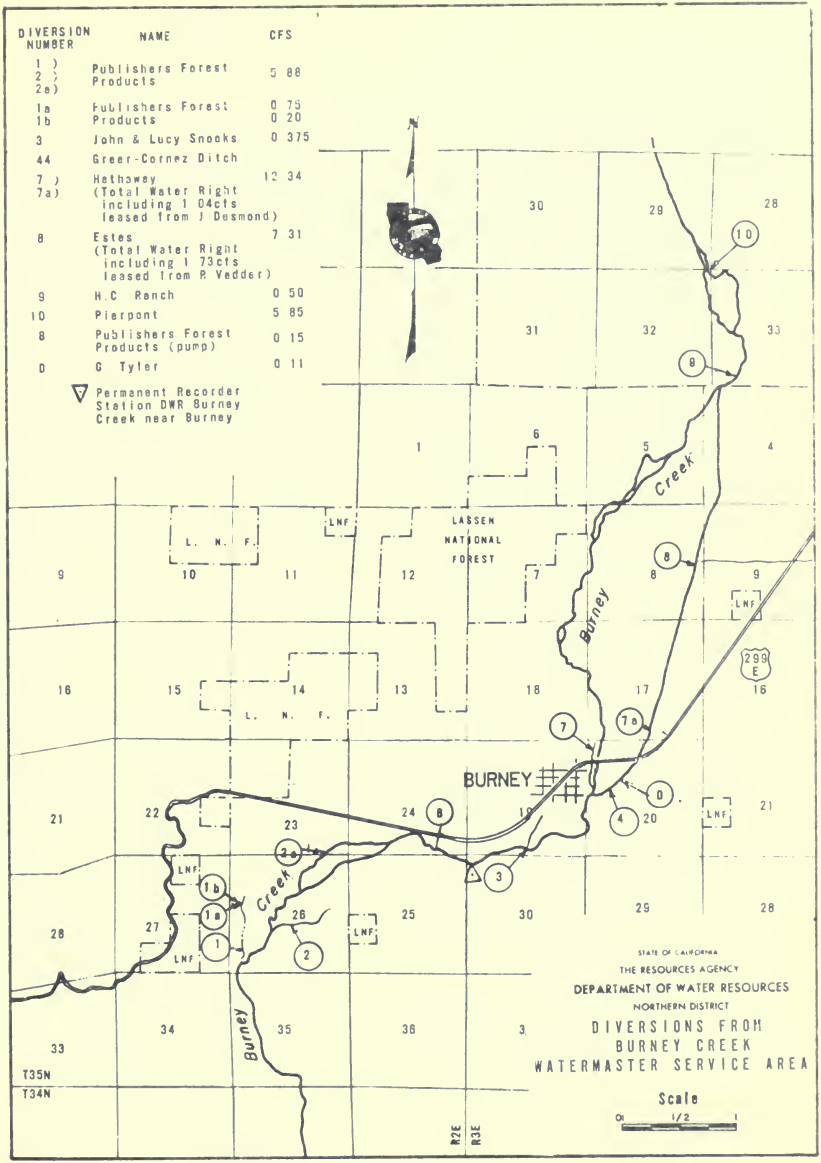
BURNEY CREEK WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 8

BURNEY CREEK NEAR BURNEY

Day	March	April	May	June	July	August	September	Day
1	188	92	142	84	15	8.3	13	1
2	161	77	137	74	15	8.9	14	2
3	146	81	142	67	15	11	14	3
4	131	94	141	57	14	11	14	4
5	109	102	138	47	14	12	14	5
6	118	113	130	43	13	12	14	6
7	109	126	129	40	14	12	14	7
8	103	123	127	38	15	13	15	8
9	99	124	124	35	15	13	14	9
10	132	133	120	33	14	13	13	10
11	155	143	117	32	14	12	12	11
12	139	150	122	30	15	13	11	12
13	122	158	133	29	15	13	11	13
14	108	146	131	29	14	13	11	14
15	103	156	132	27	14	12	11	15
16	103	155	131	25	14	11	11	16
17	109	234	132	27	13	12	11	17
18	99	186	129	26	15	12	11	18
19	99	163	122	26	14	11	13	19
20	102	142	114	25	12	11	22	20
21	99	140	103	22	13	12	16	21
22	98	147	93	20	12	12	15	22
23	94	154	88	20	12	13	30	23
24	99	156	154	22	11	14	27	24
25	90	159	249	20	11	14	22	25
26	90	166	159	20	11	14	18	26
27	93	182	120	19	11	14	18	27
28	89	186	101	19	13	13	17	28
29	86	176	87	19	12	13	17	29
30	84	156	80	16	8.9	13	17	30
31	88		78		9.2	13		31
Mean	111	144	126	33.0	13.2	12.2	15.3	Mean
Runoff In Acre-Feet	6833	8569	7745	1966	809	752	912	Runoff In Acre-Feet


DIVERSION NUMBER
NAME
CFS
1) 2) 2a) Publishers Forest Products 5 88
1a Publishers Forest Products 0 75
1b 0 20
3 John & Lucy Snooks 0 375
44 Greer-Cornez Ditch
7) 7a) Hathaway (Total Water Right including 1 04cfs leased from J Desmond) 12 34
8 Estes (Total Water Right including 1 73cfs leased from R Vedder) 7 31
9 H.C Ranch 0 50
10 Pierpont 5 85
8 Publishers Forest Products (pump) 0 15
D C Tyler 0 11
Permanent Recorder Station DWR Burney Creek near Burney
L. N. F.
LNF
LASSEN NATIONAL FOREST
Burney Creek
BURNEY
299 E
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM BURNEY CREEK WATERMASTER SERVICE AREA
Scale
0 1/2 1
T35N
T34N
R2E
R3E

Butte Creek Watermaster Service Area

The Butte Creek service area is situated in Butte County a few miles southeast of the City of Chico. The watermaster service area extends for about 11 miles along Butte Creek, commencing approximately 4 miles east of Chico and extending downstream to the crossing of Western Canal. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet.

A map of the Butte Creek stream system is presented in Figure 5, page 29.

Basis of Service

The rights on this stream system were determined by a statutory adjudication and set forth in Decree No. 18917, Butte County Superior Court, dated November 6, 1942. The Butte Creek watermaster service area was created on January 7, 1943.

There are presently 44 water rights owners in the service area (below Diversion 50) with allotments totaling 422.30 cubic feet per second.

The Butte Creek decree established three priority classes for summer use under Schedule 7, a surplus class inferior to the above rights, and a special class for Hamlin Slough. Schedule 3 of the decree defines the rights for rediversion (Diversion 50) of foreign water delivered into Butte Creek from the West Branch of Feather River.

The Water Resources Control Board, on September 18, 1969, granted permits for the following applications to appropriate water from Butte Creek: applications 22321, Gorrill Land Company; 22534, Garrison Patrick; and 22564, Louis C. Camenzind, Jr. These appropriative rights are also under control of the watermaster.

Water Supply

Butte Creek, the major source of water, drains approximately 150 square miles of the western slope of the Sierra Nevada Mountains in the northeasterly portion of Butte County above the watermaster service area. The maximum elevation in the watershed is about 7,000 feet.

Normally, snowmelt produces sustained high flows in the creek until about the end of June, after which perennial springs continue to produce flows of more than 40 cubic feet per second. Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toadtown) Canal through De Sabla Reservoir and powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 9, 10, and 11, pages 26 and 27.

Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T Inc., Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water by gravity into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice, including contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in the past few years, especially for orchards.

1973 Distribution

Watermaster service began April 18 in the Butte Creek service area and continued until September 30. Kenneth Morgan,

Water Resources Engineering Associate, was the watermaster.

The available water supply for the 1973 irrigation on Butte Creek was near average. The flow in Butte Creek was sufficient to satisfy all allotments until about June 1. The flow decreased from then until the end of July during which time the surplus class priority was being served. From about August 1 through September 18 a portion of the second priority class was served. From September 18 through September 30 the water supply was sufficient to satisfy all requirements.

BUTTE CREEK WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 9

BUTTE CREEK NEAR CHICO

Day	March	April	May	June	July	August	September	Day
1	1850	719	630	520	204	161	121	1
2	1510	635	616	485	201	157	119	2
3	1340	595	610	448	198	152	119	3
4	1220	582	631	425	198	152	119	4
5	1070	596	585	403	196	151	118	5
6	1350	615	559	386	193	151	127	6
7	1180	633	562	368	193	151	118	7
8	1040	612	569	352	193	150	119	8
9	926	621	559	340	192	151	119	9
10	937	623	564	333	190	150	117	10
11	1170	636	567	314	187	148	122	11
12	954	658	575	300	186	147	123	12
13	844	673	600	287	193	143	135	13
14	755	638	629	279	189	141	139	14
15	693	632	621	277	188	140	134	15
16	659	611	640	271	186	139	134	16
17	678	617	619	268	187	138	134	17
18	625	615	617	263	186	133	134	18
19	636	582	628	258	183	131	134	19
20	857	554	602	248	180	132	181	20
21	887	536	578	242	188	128	199	21
22	827	536	555	240	186	124	147	22
23	747	558	525	240	182	120	179	23
24	692	583	520	233	177	125	137	24
25	666	607	550	219	174	126	113	25
26	649	650	540	234	170	136	103	26
27	642	690	520	222	173	137	102	27
28	610	708	500	212	172	115	119	28
29	579	703	487	203	172	130	112	29
30	582	665	480	207	170	122	113	30
31	800		495		164	121		31
Mean	902	623	572	303	186	139	130	Mean
Runoff In Acre-Feet	55490	37060	35170	18000	11410	8530	7720	Runoff In Acre-Feet

BUTTE CREEK WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 10

BUTTE CREEK NEAR DURHAM

Day	March	April	May	June	July	August	September	Day
1	1810	727	465	224	28	16	14	1
2	1490	650	465	123	23	8.8	14	2
3	1320	615	453	41	22	9.7	14	3
4	1240	594	460	32	25	10	15	4
5	1080	598	396	27	28	11	13	5
6	1340	613	372	24	27	14	13	6
7	1140	619	373	69	26	11	12	7
8	1040	598	383	96	28	14	12	8
9	940	598	393	84	28	20	11	9
10	907	598	406	85	27	14	11	10
11	1080	605	398	80	28	14	12	11
12	910	629	388	62	30	17	11	12
13	826	637	415	69	32	16	11	13
14	764	618	424	70	34	9.9	12	14
15	723	598	408	74	31	11	12	15
16	698	584	429	77	30	14	12	16
17	711	577	410	76	28	12	12	17
18	682	570	406	71	30	4.9	12	18
19	686	542	391	69	29	7.4	14	19
20	863	521	373	60	29	13	55	20
21	915	503	329	56	31	13	98	21
22	853	493	317	42	29	3.5	69	22
23	785	507	308	35	25	3.5	77	23
24	743	521	320	49	29	3.5	59	24
25	716	521	352	26	29	3.5	30	25
26	705	528	285	38	29	8.3	27	26
27	706	542	242	29	26	8.5	38	27
28	687	537	228	20	22	9.0	56	28
29	660	514	223	25	22	9.4	49	29
30	648	486	214	31	24	9.9	38	30
31	801		219		20	11		31
Mean	918	574	362	62.1	27.4	10.7	27.8	Mean
Runoff In Acre-Feet	56467	34201	22304	3697	1684	656	1652	Runoff In Acre-Feet

TABLE 11

TOADTOWN CANAL ABOVE BUTTE CANAL

Day	March	April	May	June	July	August	September	Day
1	117	110	107	107	84	73	47	1
2	117	109	107	108	85	71	46	2
3	117	108	107	110	83	70	47	3
4	115	110	108	109	85	70	48	4
5	114	114	108	110	84	70	48	5
6	116	115	108	109	82	69	47	6
7	115	115	108	109	82	68	46	7
8	114	114	108	108	85	68	46	8
9	113	114	108	108	83	68	45	9
10	117	114	107	108	82	67	47	10
11	116	113	107	109	81	67	46	11
12	113	109	107	109	83	66	58	12
13	112	113	107	109	85	65	61	13
14	111	113	106	109	84	64	61	14
15	110	112	105	109	84	63	59	15
16	109	113	107	109	84	64	59	16
17	110	115	109	108	85	61	58	17
18	108	115	108	108	84	56	59	18
19	110	114	107	107	84	56	59	19
20	113	114	106	105	86	56	86	20
21	110	113	107	105	86	52	81	21
22	110	113	107	105	86	47	77	22
23	109	112	106	105	84	47	86	23
24	108	113	107	87	83	50	53	24
25	108	112	107	101	82	51	29	25
26	109	111	108	99	82	53	26	26
27	110	110	111	95	85	51	40	27
28	109	110	110	89	84	50	34	28
29	109	109	109	84	84	49	39	29
30	111	108	109	88	82	47	38	30
31	115		108		76	47		31
Mean	112	112	108	104	83.5	59.9	52.5	Mean
Runoff In Acre-Feet	6890	6670	6610	6200	5140	3680	3130	Runoff In Acre-Feet

Diversion #	Water Right Owner	Priority 1st	Priority 2nd	Priority 3rd	Surplus	Import	Application Permit
Butte Creek							
50	M. & T. Incorporated	3.00			25.00	53.33*	
	Parrott Investment Company				25.00	53.33*	
	McClain, Benson, et al	3.00					
	Dayton Mutual Water Company	16.00				3.33*	
	*Water imported by PG&E from West Branch Feather River via Hendricks Canal and released into Butte Creek, less 5% for conveyance losses.						
53[2/]	U. S. Department of Agriculture	2.00					
54	Patrick	4.445					13.0[1]
	Smith	0.555					
55	Camenzind Brothers	5.00					6.50[1]
56	Durham Mutual Water Company	44.70					
	Parrott Investment Company	2.00					
	Carlson	0.48					
	Bell	0.39					
	Domom Brothers	0.67					
	Logan	0.01					
	Vernoga	1.447					
	Konyn - Amerio	0.40					
	Bebich	0.446					
	Jugum	0.447					
	Wheelock	0.26					
	Total	51.25					
57[2]	Coats	2.00					
58[2]	Wakefield	0.61					
	Hansen				2.50		
59B[2]	Brandt	0.39					
60	Newhall Land & Farming Company		6.00	0.75	21.25		150.00[3]
60A[2]	Knowles	0.66					
	Phillips	0.66					
61	Gorrill Land Company[4]			1.00[5]	20.70[5]		75.00[3]
62[2]	White, Mead, McAlister, & Ryon			1.00	9.50		
Hamlin Slough							
	Newhall Land & Farming Company	16.60					
	Gorrill Land Company	21.70[5/]					

1 March 1 - June 30

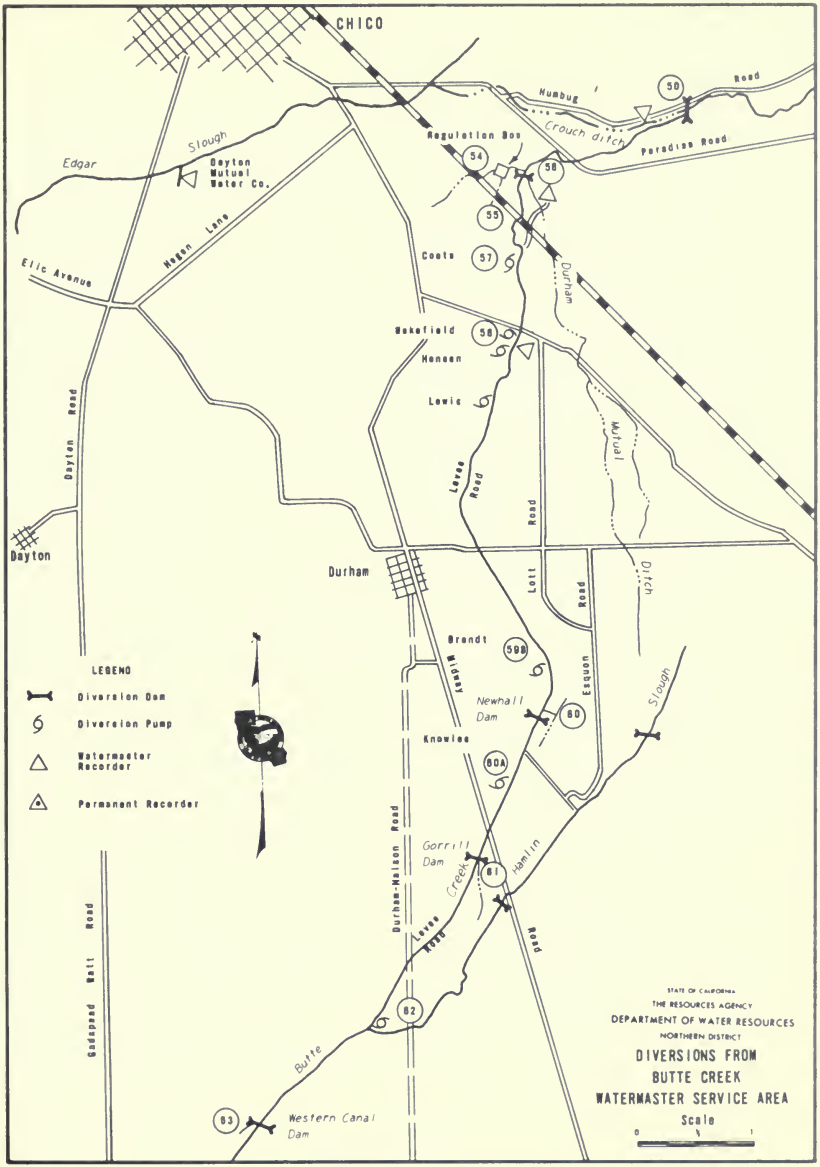
2 Pumps

3 March 15 - June 15

4 See Hamlin Slough

5 Total diversions from Butte Creek and Hamlin Slough not to exceed 21.70 cfs.

Figure 5


CHICO
Humbug
Road
50
Crouch ditch
Paradise Road
Slough
Edgar
Dayton
Mutual
Water Co.
Regulation Box
54
58
55
Nelson Lane
Ellis Avenue
Coats
57
Durham
Mutual
Ditch
Wakefield
56
Hansen
Lewis
Dayton Road
Levee Road
Dayton
Durham
Lott Road
Brandt
59B
Esquon
Newhall
Dam
60
Knowles
60A
Gorrill
Dam
61
Hamlin
Road
Durham-Nelson Road
Creek
Levee Road
Gadspand Butt Road
62
Butte
63
Western Canal
Dam
LEGEND
Diversion Dam
Diversion Pump
Watermaster Recorder
Permanent Recorder
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
BUTTE CREEK
WATERMASTER SERVICE AREA
Scale

Cow Creek Watermaster Service Area

The Cow Creek service area is in central Shasta County in the foothills east of Redding. Figures 6 through 6e, pages 34 through 39, show the Cow Creek stream system, including the diversions and major access roads.

The source of water supply for this service area consists of three major creek systems. They are North Cow Creek (sometimes referred to as Little Cow Creek), Oak Run Creek, and Clover Creek. These creeks flow in a westerly direction to their confluence in the Millville-Palo Cedro area and thence south to the Sacramento River east of the City of Anderson. The service area is generally a narrow strip of land on both sides of each of these creeks. In some cases water is exported from one creek to the other.

Basis of Service

The water rights on each of these creek systems were determined by court references and set forth in separate decrees. Water rights for these creeks were set forth by Shasta County Superior Court decrees as follows:

Creek	Decree No.	Date
North Cow	5804	April 29, 1932
Oak Run	5701	July 22, 1932
Clover	6904	October 4, 1937

The North Cow Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis which is now normal practice. Only one priority allotment was provided in each of the Cow Creek service area decrees except for the Oak Run Creek decree which contains a surplus allotment.

The Cow Creek watermaster service area was originally created on October 17, 1932, including North Cow Creek and Oak Run Creek water rights. On January 21, 1938, the service area was expanded to include the Clover Creek rights.

There are 90 water right owners in the area with total allotments of 67.367 cubic feet per second.

Water Supply

The water supply for this service area is derived mostly from springs and seepage, with some early snowmelt runoff. The watershed varies in elevation from 500 to 5,000 feet and consists primarily of low brushy hills which do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter months normally produce substantial seepage and springs that flow through the irrigation season. The creeks normally have sufficient water to supply all demands until late July. The supply then gradually decreases to an average of about 60 to 70 percent of allotments by around mid-September.

The daily mean discharge of North Cow Creek near Ingot is presented in Table 12, page 33. The stream gaging station on North Cow Creek is downstream of many of the diversions and is used by the watermaster primarily to indicate changes in flow conditions rather than amounts of water available. Consequently, the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from the creeks, in most cases by means of low diversion dams, into ditches which convey it to the place of use. Lateral ditches are then used to spread it over the land. Irrigation has been on a continuous-flow basis instead of by rotation since 1934.

1973 Distribution

Watermaster service began June 1 in the Cow Creek service area and continued until September 30, with John A. Nolan, Water Resources Technician II, as the watermaster.

The available water supply for the Cow Creek service area was normal until mid-July. It was below normal for North Cow Creek from mid-July through September. The available water supply was about average throughout the season for Oak Run and Clover Creeks.

Cedar Creek. Cedar Creek consistently has the lowest ratio of water supply to water rights in the Cow Creek service area. However, during 1973 some water right owners chose not to use their allotments. Consequently, those using water received a reasonable supply throughout the summer.

North Cow Creek. There was a surplus flow of water in North Cow Creek until about the third week in July. There was then sufficient water available to supply about 90 percent of allotments until early August. The flow gradually decreased to a seasonal low of 60 percent at the end of August and continued at that level through September

Oak Run Creek. Oak Run Creek historically provides the best supply of water in the Cow Creek service area. The springs at its headwaters are not as severely affected in drought periods as those of neighboring streams. The available water supply in Oak Run Creek was sufficient to supply surplus flows to most water users throughout the season.

Clover Creek. The available water supply in Clover Creek was about average during most of the irrigation season. Surplus water was available until mid-August. From that time on, the supply receded gradually to a seasonal low of 85 percent in late September, due to excessive evaporation and conveyance losses occurring in the 20-mile length of canyon between the upper users near Oak Run and the lower users near Millville.

COW CREEK WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

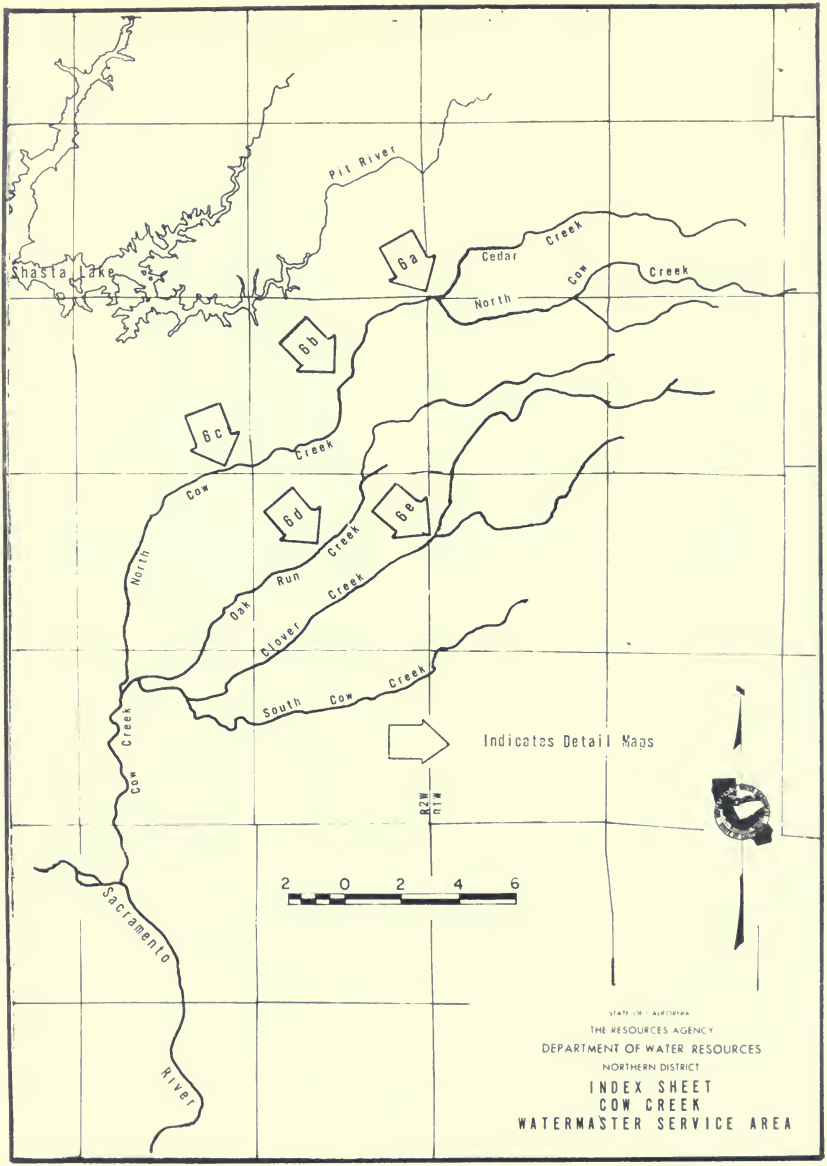
TABLE 12

NORTH COW CREEK NEAR INGOT

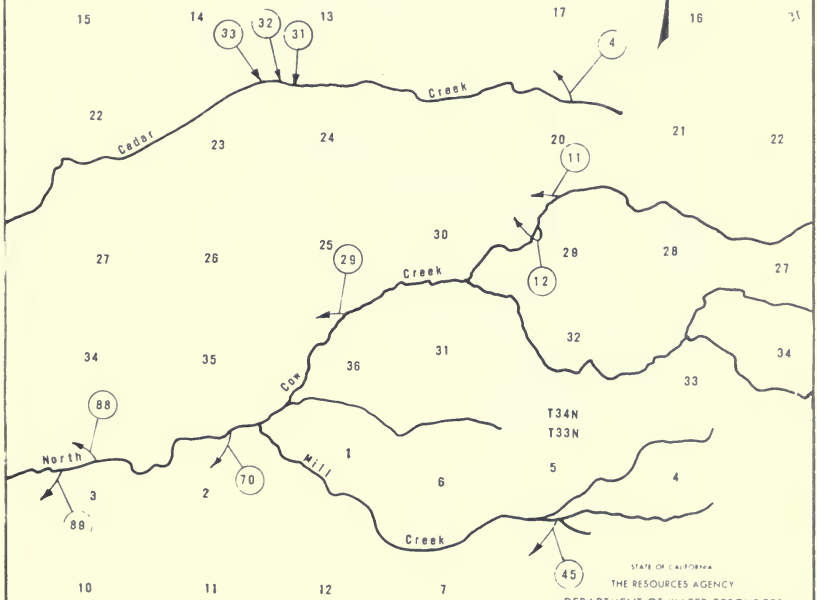
Day	March	April	May	June	July	August	September	Day
1				55*	15	9.3	8.4	1
2				45	15	9.3	7.9	2
3				42	15	9.3	7.4	3
4				40	14	9.3	7.0	4
5				37	14	8.4	7.0	5
6				36	13	7.9	6.5	6
7				34	12	8.4	9.3	7
8				32	13	8.4	9.3	8
9				30	12	7.4	8.4	9
10				30	12	7.9	7.9	10
11				28	11	7.9	8.4	11
12				26	11	7.4	9.3	12
13				25	12	8.4	9.3	13
14				25	12	7.9	9.3	14
15				24	12	7.9	9.6	15
16				24	12	7.0	9.6	16
17				23	12	7.0	10	17
18				23	12	7.0	9.6	18
19				22	12	7.4	12	19
20				22	12	7.0	25	20
21				21	12	7.0	16	21
22				21	12	9.3	16	22
23				20	12	10	36	23
24				18	11	11	24	24
25				17	10	11	21	25
26				16	8.7	9.6	16	26
27				16	9.6	10	14	27
28				15	10	11	14	28
29				15	9.6	11	14	29
30				15	9.6	9.3	14	30
31					10	8.7		31
Mean				26.6	11.9	8.7	12.5	Mean
Runoff In Acre-Feet				1580	729	532	746	Runoff In Acre-Feet

* Beginning of Record

Figure 6


Shasta Lake
Pit River
6a
Cedar Creek
Cow Creek
North Cow Creek
6b
6c
Cow Creek
North Cow Creek
6d
6e
Oak Run Creek
Clover Creek
South Cow Creek
Cow Creek
Indicates Detail Maps
R2W
R1W
2 0 2 4 6
Sacramento River
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
INDEX SHEET
COW CREEK
WATERMASTER SERVICE AREA

Diversion Number	Owner	CFS
4	Bishop	0.50
11	Mc Millian	0.46
12	Benbow	0.63
29	Grant- Pherson-Jones	2.60
31	Spaulding-Haley	1.30
32	Halcumb	4.00
33	Roe	0.30
45	Export Water to Oak Run Creek	5.00
70	Nichols	0.31
88	Ruthford	1.80
89	Bobich	0.47

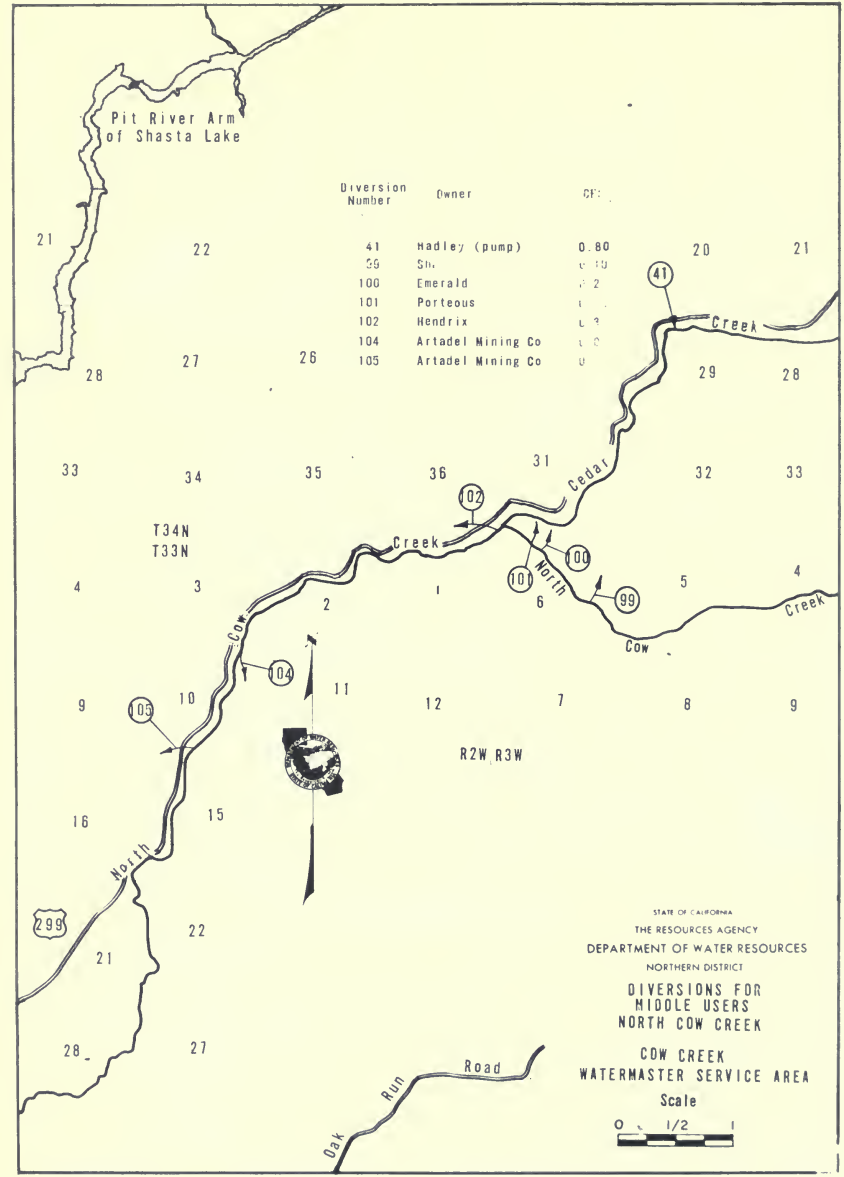


STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FOR UPPER USERS NORTH COW CREEK

COW CREEK WATERMASTER SERVICE AREA

Scale
0 1/2 1


Pit River Arm
of Shasta Lake
Diversion Number
Owner
CFS
41 Hadley (pump) 0.80
99 Sh.
100 Emerald
101 Porteous
102 Hendrix
104 Artadel Mining Co
105 Artadel Mining Co
Cedar Creek
North Cow Creek
Cow Creek
T34N
T33N
R2W R3W
Oak Run Road
299
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FOR
MIDDLE USERS
NORTH COW CREEK
COW CREEK
WATERMASTER SERVICE AREA
Scale
0 1/2 1

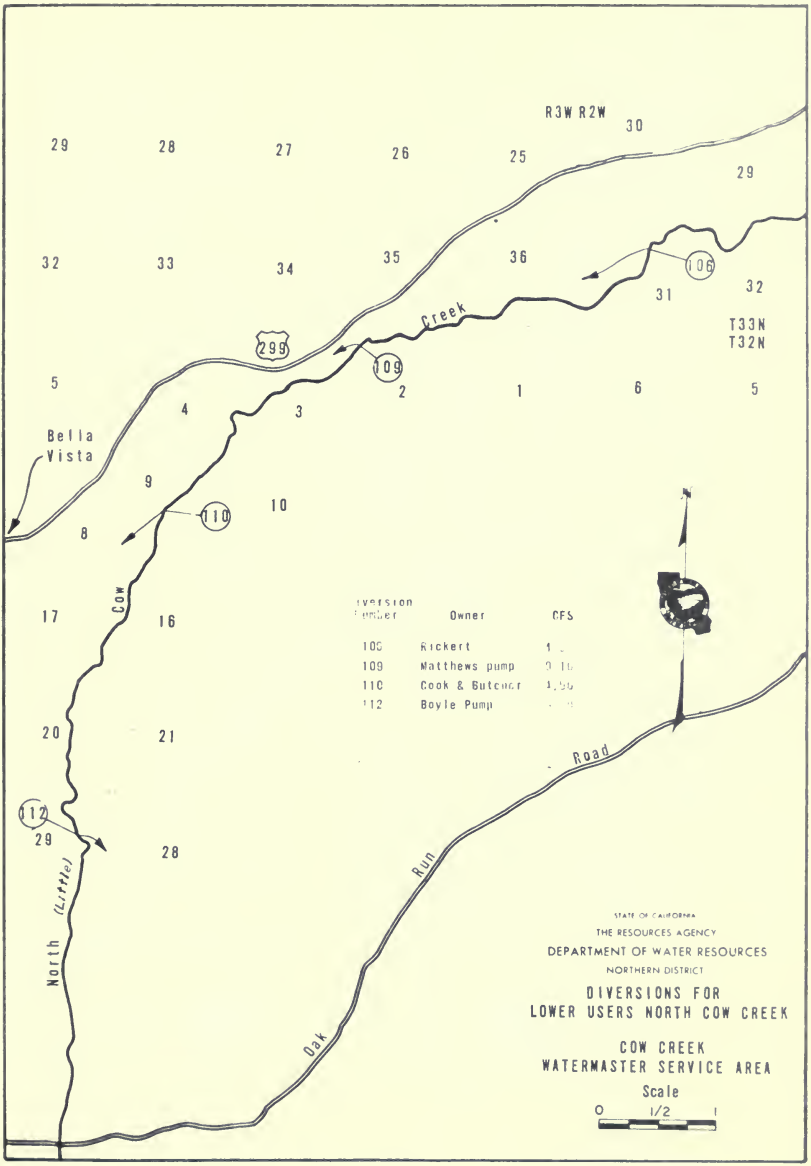

R3W R2W
29
28
27
26
25
30
29
32
33
34
35
36
31
32
T33N
T32N
5
4
3
2
1
6
5
Creek
299
109
106
Bella
Vista
9
10
8
110
Cow
17
16
20
21
112
29
28
North (Little)
Oak
Run
Road
Diversion Number
Owner
CFS
106
Rickert
109
Matthews pump
110
Cook & Gutcher
112
Boyle Pump
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FOR
LOWER USERS NORTH COW CREEK
COW CREEK
WATERMASTER SERVICE AREA
Scale
0
1/2
1

Figure 6d

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
OAK RUN CREEK
COW CREEK
WATERMASTER SERVICE AREA
Scale
0 1 2
Diversion Number
Ditch
CFS
45 Welsh-Strayer ditch from Mill Creek to Oak Run Creek 5.00
9 Welsh-Strayer Rediversion 2.30 *
10 Pedmore Upper .65
11 Pedmore Lower .25
12 Pedmore South .65
13 Alpaugh .65
14 Pedmore .65
15 Kerkehdahl .65
21 Winters (Surplus) .395
* When flow of Oak Run Creek at diversion 9 is less than 5.40 CFS (including foreign water from Mill Creek) the flow at diversion 9 will be divided 43 into diversion 9 and 57 in Oak Run Creek.
Mill Creek
Oak Run
Murphy-Estep Branch
To Willows
(ditch)
T. 34 N.
T. 33 N.
T. 32 N.
T. 31 N.
R. 1 E.
R. 1 W.
R. 2 W.
R. 3 W.

Figure 6e

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
CLOVER CREEK
COW CREEK
WATERMASTER SERVICE AREA
Scale
0 1 2
Diversion Number
Owner
CFS
1 Worley ditch 2 74
2 Guttman ditch 1 85
3 Bonde ditch 1 30
4 Mill ditch 5 45
6 Maxwell ditch 0 35
7
9 Welch & Haller ditch 2 15
13 C Taylor 0 70
16 Harper-Covey 0 50
18 J. Hunt 0 40
19 Slaughter Pole ditch 0 40
23 C Taylor 1 40
26 Millville ditch 4 40
T. 34 N.
T. 33 N.
T. 32 N.
T. 31 N.
R. 3 W.
R. 2 W.
R. 1 W.
R. 1 E.
Clover Creek
Willcox Creek
Slaughter Pole Creek
South Clover Creek
Cow Creek
Whitmore
Millville
Oak Run
Clover Creek Road
Oak Run Road
Wingham Creek
To Whitmore
To Whitmore

Digger Creek Watermaster Service Area

The Digger Creek service area is situated in southeastern Shasta County and northeastern Tehama County.

Digger Creek forms a portion of the boundary line between Shasta and Tehama Counties. It drains an area of approximately 45 square miles on the western slopes of mountains situated immediately west of Lassen National Park. The creek flows in a westerly direction through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, is located approximately 40 miles northeast of Red Bluff.

A map of the Digger Creek stream system is presented as Figure 7, page 43.

Basis of Service

The rights to use of the waters of Digger Creek were determined by five court adjudications. The Crooker Ditch, now combined with the Harrison Ditch, may divert all the water in the creek at its point of diversion. Diversions below this point, though defined by decree, are not in the service area.

Four Tehama County Superior Court decrees define the rights included in the service area. These decrees are listed on page 42.

The four decrees have, in effect, divided the water rights on the creek into two groups, the upper users and the lower users. The three upper users irrigate land adjoining the stream so that all water not consumptively used returns to Digger Creek. The lower users are located within a 5-square-mile area. Very little runoff from the lower users returns to the creek.

The water rights of the three upper users are absolute and not correlative to the lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, the upper users, in effect, have first priority allotments, and the lower users have second and third priority allotments.

The Digger Creek watermaster service area was created June 11, 1964, and watermaster service has been provided each year since that time. There are 38 water right owners in the area with total allotments of 23.225 cubic feet per second.

Water Supply

Precipitation, occurring principally in the winter months, is typical of Northern California foothill areas. Snowmelt contributes to the early runoff but the summer streamflow is primarily from springs. In average runoff years there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the entire irrigation season. However, serious deficiencies occur in dry years.

The estimated daily mean discharge of Digger Creek below the mouth of the South Fork is presented in Table 13, page 42.

Method of Distribution

Irrigation is accomplished principally by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1973 Distribution

Watermaster service began July 1 in the Digger Creek service area and continued until September 30. John A. Nolan, Water Resources Technician II, was watermaster during this period.

The available water supply in Digger Creek was very good. During the usually critical months of August and September all water users received 100 percent or more of their allotment.

Case	Decree No.	Date Entered
Cransbury v. Edwards	2213	August 12, 1899
Wells v. Pritchard	3214	May 27, 1913
Harrison et al v. Kaler et al	3327	October 15, 1917
Herrick v. Forward	4570	February 24, 1927

DIGGER CREEK WATERMASTER SERVICE AREA

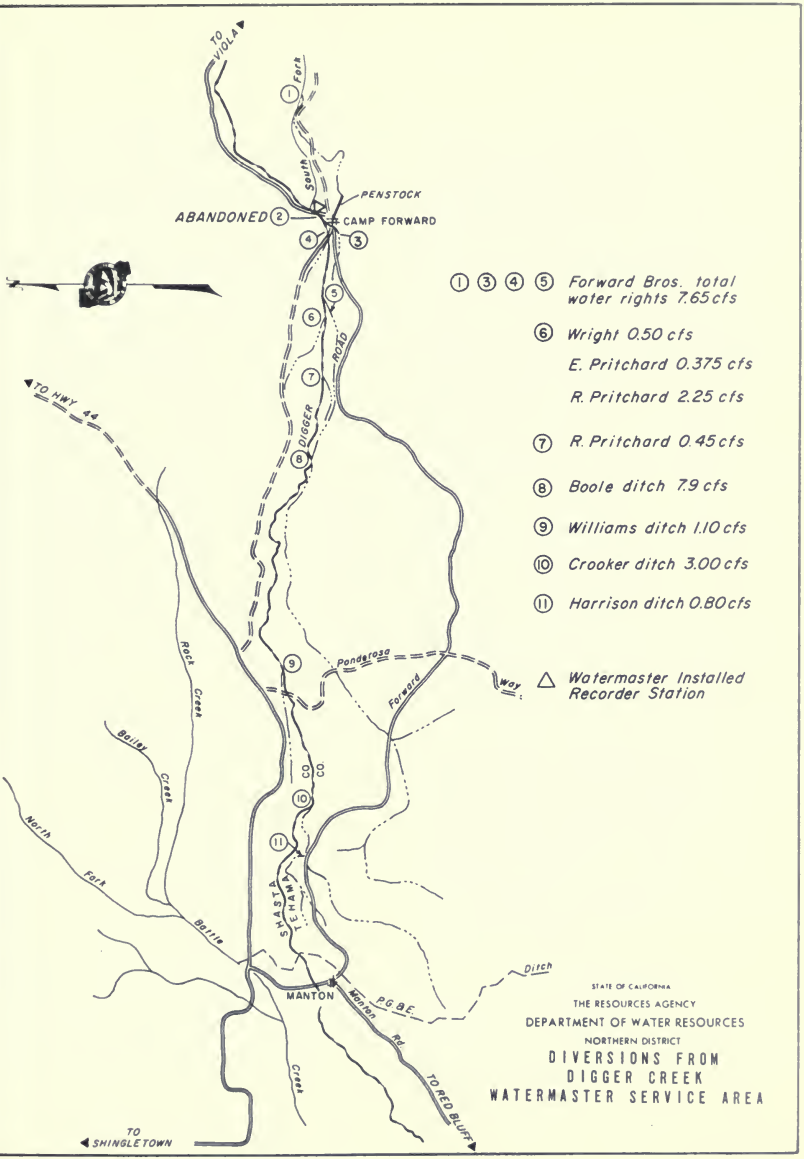
1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 13

DIGGER CREEK BELOW SOUTH FORK BRANCH

Day	March	April	May	June	July	August	September	Day
1					25*	18	16	1
2					25	17	15	2
3					24	17	15	3
4					24	17	15	4
5					24	17	15	5
6					23	17	15	6
7					23	17	15	7
8					22	17	15	8
9					22	17	15	9
10					22	17	15	10
11					22	17	15	11
12					21	17	15	12
13					21	17	15	13
14					20	17	15	14
15					20	17	15	15
16					20	17	15	16
17					20	16	15	17
18					20	16	15	18
19					20	16	15	19
20					20	16	17	20
21					20	16	15	21
22					20	16	15	22
23					19	16	17	23
24					19	16	18	24
25					19	16	17	25
26					18	16	15	26
27					18	16	15	27
28					18	16	15	28
29					18	16	15	29
30					18	16	15	30
31					18	16		31
Mean					20.7	16.5	15.3	Mean
Runoff In Acre-Feet					1280	1020	912	Runoff In Acre-Feet

* Beginning of Record


TO VIOLA
South Fork
PENSTOCK
ABANDONED (2)
CAMP FORWARD
(4)
(3)
(5)
(6)
DIGGER ROAD
(7)
TO HWY 44
(8)
Rock Creek
Ponderosa Way
Forward
(9)
Bailey Creek
(10)
(11)
North Fork Battle Creek
SHASTA DAM
MANTON
Ditch
P.G.&E.
Wanton Rd.
TO RED BLUFF
TO SHINGLETOWN
(1) (3) (4) (5) Forward Bros. total water rights 7.65 cfs
(6) Wright 0.50 cfs
E. Pritchard 0.375 cfs
R. Pritchard 2.25 cfs
(7) R. Pritchard 0.45 cfs
(8) Boole ditch 7.9 cfs
(9) Williams ditch 1.10 cfs
(10) Crooker ditch 3.00 cfs
(11) Harrison ditch 0.80 cfs
△ Watermaster Installed Recorder Station
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
DIGGER CREEK
WATERMASTER SERVICE AREA

French Creek Watermaster Service Area

The French Creek service area is situated in Scott Valley, western Siskiyou County, near the town of Etna. The major sources of water supply are French, Miners, and North Fork French Creeks. French Creek flows in a northeasterly direction through the central part of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about 3 miles above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek 1 mile upstream from the confluence with Miners Creek.

The service area encompasses the entire agricultural area within the French Creek Basin, and some additional lands along the west side of the Scott River near the town of Etna. The service area is about 1/2 mile wide and 5 miles long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 3,200 feet at the south to about 2,800 feet at the confluence of French Creek and Scott River.

A map of the French Creek stream system with the diversions and roads is presented as Figure 8, page 47.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 14478, Siskiyou County Superior Court, dated July 1, 1958.

Water is distributed according to three schedules: North Fork French Creek with three priorities; Miners Creek with three; and the French Creek, Horse Range Creek, Paynes Lake Creek, and Duck Lake Creek system with seven. These schedules are independent of each other with two exceptions. These involve the use of some Miners Creek users having the option to divert from French Creek when water is not available from Miners Creek. These rights are further limited by specifying maximum allowable flows at given points, regardless of the source of the water.

One peculiarity of this decree is that it included two water rights that have a specified amount but are subject to the exclusive control of the other owners of the ditch.

The French Creek watermaster service area was created on November 19, 1968, and service was started on July 1, 1969.

There are 27 water users in the service area with water rights totaling 30.59 cubic feet per second.

Water Supply

The water supply is derived from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

The watershed of French Creek contains about 32 square miles of heavily forested, steep, mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 7,200 feet along its west rim to about 3,200 feet at the foot of the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of Duck Lake Creek, a tributary, is presented in Table 14, page 46.

Method of Distribution

Irrigation is accomplished primarily by wild flooding, with permanent pasture and alfalfa fields comprising the major

crops. Water is conveyed by ditches and laterals to the place of use.

1973 Distribution

Watermaster George H. Pape, Associate Engineer, Water Resources, was on duty in the French Creek service area from July 1 until September 30.

Because watermaster service was initiated in 1969, there is only a short period of record available for a water supply comparison with past years. However, it was generally reported in the area that water-year conditions were considerably below average.

Because of tributaries and springs below Diversions 1 through 5, water is often available late in the season to the lower users even though all of the upstream flow in French Creek is being diverted. Upstream third priority allotments were shut off in mid-July to satisfy the second priority rights in that area. Some third priority allotments remained available further downstream until early August.

FRENCH CREEK WATERMASTER SERVICE AREA

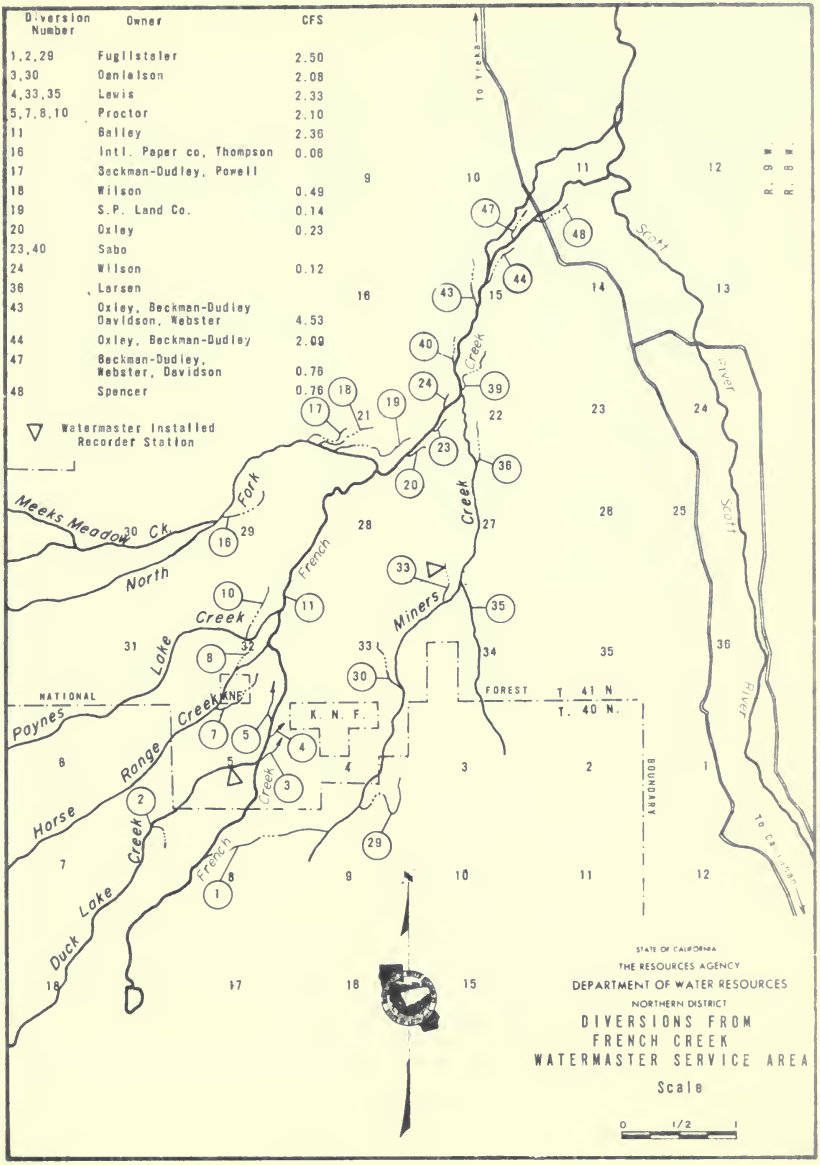
1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 14

DUCK LAKE CREEK TRIBUTARY TO FRENCH CREEK

Day	March	April	May	June	July	August	September	Day
1				8.0	5.2	1.2		1
2				7.9	5.2	1.0		2
3				7.9	5.2	1.0		3
4				10	4.9	1.0		4
5				8.5	4.9	1.1		5
6				7.8	4.7	1.1		6
7				7.8	4.5	0.9		7
8				7.9	4.5	0.9		8
9				7.7	4.4	0.8		9
10				7.6	4.5	0.9		10
11				7.6	4.3	0.9		11
12				7.6	4.0	0.9		12
13				7.4	4.0	0.8		13
14				7.4	3.9	0.8		14
15			10*	7.3	3.7	0.8		15
16			10	7.4	3.4	0.6		16
17			14	7.1	3.4	0.6		17
18			10	7.1	3.0	0.6		18
19			9.7	7.0	2.9	0.6**		19
20			9.7	6.8	2.6			20
21			9.4	6.6	2.4			21
22			9.1	6.6	2.3			22
23			9.3	6.2	1.7			23
24			8.9	6.1	1.8			24
25			8.5	6.2	1.5			25
26			8.5	6.0	1.5			26
27			8.2	5.8	1.2			27
28			8.2	5.8	1.3			28
29			8.0	5.5	1.2			29
30			8.1	5.2	1.2			30
31			8.0		1.2			31
Mean			9.3	7.1	3.2	0.9		Mean
Runoff In Acre-Feet			312	424	199	33		Runoff In Acre-Feet

* Beginning of Record
** End of Record


Diversion Number
Owner
CFS
1,2,29 Fuglistaler 2.50
3,30 Danielson 2.08
4,33,35 Lewis 2.33
5,7,8,10 Proctor 2.10
11 Bailey 2.36
16 Intl. Paper co, Thompson 0.08
17 Beckman-Dudley, Powell
18 Wilson 0.49
19 S.P. Land Co. 0.14
20 Oxley 0.23
23,40 Sabo
24 Wilson 0.12
36 Larsen
43 Oxley, Beckman-Dudley Davidson, Webster 4.53
44 Oxley, Beckman-Dudley 2.09
47 Beckman-Dudley, Webster, Davidson 0.78
48 Spencer 0.76
Watermaster Installed Recorder Station
To Yreka
Scott River
Meeks Meadow Ck.
North Fork
French Creek
Miners Creek
Lake Creek
Paynes Creek
Horse Range Creek
Duck Lake Creek
French Creek
NATIONAL FOREST
K. N. F.
T. 41 N.
T. 40 N.
BOUNDARY
R. 9 W.
R. 8 W.
To California
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
FRENCH CREEK
WATERMASTER SERVICE AREA
Scale
0 1/2 1

Hat Creek Watermaster Service Area

The Hat Creek service area is in the eastern part of Shasta County north of Lassen Volcanic National Park. The maps, Figures 9 through 9b, pages 51 through 53, show the Hat Creek service area and stream system, including locations of the diversions of the upper and lower user groups.

Hat Creek, which flows in a northerly direction through the area, is the only source of water supply in the service area. The place of use is Hat Creek Valley, which is approximately 20 miles long and 2 miles wide, extending northward from about 3 miles south of the town of Old Station to the confluence with Rising River. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large outcroppings of volcanic rocks.

Basis of Service

Water from Hat Creek is distributed under provisions of court reference adjudications which resulted in Decree No. 5724, dated May 14, 1924, and Decree No. 7858, dated May 7, 1935, Shasta County Superior Court. Decree No. 5724 established irrigation and nonirrigation allotments for 18 periods of rotation between "upper" and "lower" user groups for the period of May 1 to October 28 annually. Decree No. 7858 established 3 allotments for continuous irrigation, May 1 through October 28, and allotments for the period October 28 to May 1 annually for all users. These latter rights are not normally supervised by the watermaster.

Watermaster service in the Hat Creek area has been provided in accordance with the decree since 1924. The existing service area was created on September 11, 1929.

Decree No. 5724 defines the allotments in two separate schedules: upper and lower users, requiring 10-day rotations beginning at 6 a.m., May 1, and terminating at 6 a.m., October 28. All water rights are of the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 154.7 cubic feet per second and lower users require 166.5 cubic feet per second. The lower users require more because of additional channel loss. When the upper users are being served, the lower users receive a minimum flow for stock water.

Water Supply

The water supply of Hat Creek is derived from snowmelt runoff from Lassen Peak and from large springs. Snowmelt normally creates a high flow during May and June, but the substantial portion of the summer supply comes from large springs which decrease only slightly in output. Only after a series of dry years does the flow of these springs fall much below 75 percent of total allotments.

A record of the daily mean discharge of Hat Creek near the town of Hat Creek is presented in Table 15, page 50.

Method of Distribution

Most irrigation in the area is accomplished by wild flooding. Large heads of water are used to cover the land rapidly, thereby preventing excessive loss from percolation in the extremely porous soil. Diversion dams constructed across the creek serve to divert water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditches or from laterals. A few domestic rights are met by pumping directly from Hat Creek.

1973 Distribution

Virgil Buechler, Water Resources Technician II, served as watermaster in the Hat Creek service area from April 29 until September 30, 1973.

The 10-day rotation schedule was initiated in May. An extremely dry and cold spring caused all users to start irrigating prior to the hot weather. With the weather remaining cold during May, the runoff of 150 cfs was below normal, resulting in regulation of the creek to the 10-day rotations. As the weather warmed up in June, the flow increased slightly but still required the 10-day rotation with surplus water distributed to the users on rotation.

In late July the flows dropped to 145 cfs. For the remainder of the irrigation season rotations were 90 percent of the water rights to the lower users and 95 percent to upper users.

Special Occurrences

A new recorder well was installed at the Bibbens Bridge, the point of division between the upper and lower users.

After the irrigation season, the Lonquist Ditch diversion point, with the screw-type headgate, was relocated to a new site 100 yards downstream from the old one, and a Parshall flume constructed.

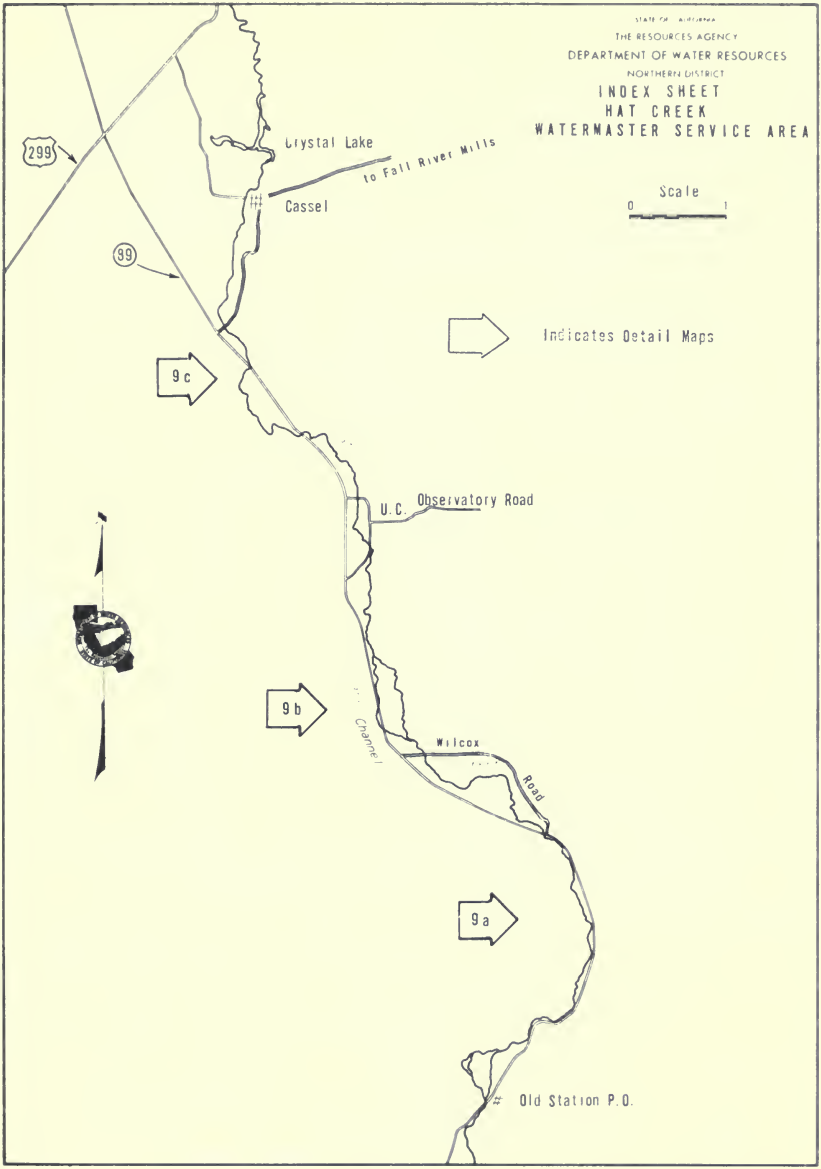
HAT CREEK WATERMASTER SERVICE AREA

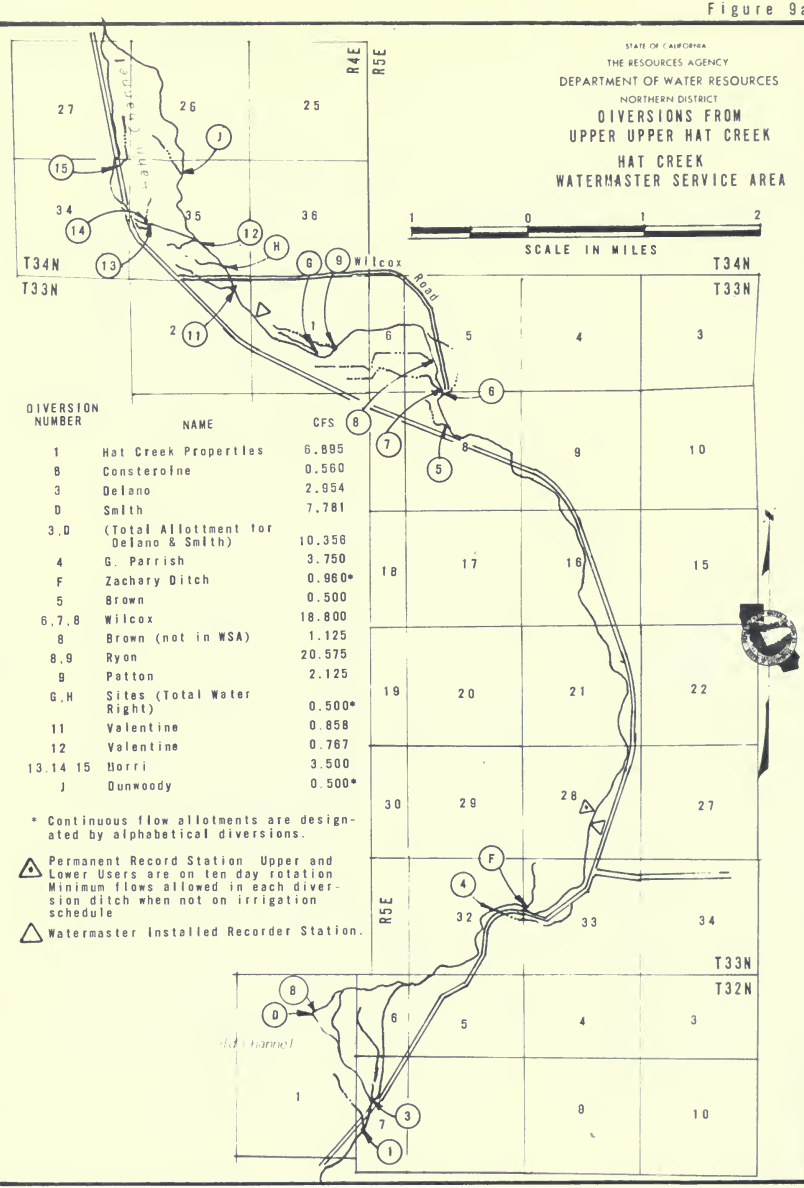
1973 Daily Mean Discharge in Cubic Feet Per Second

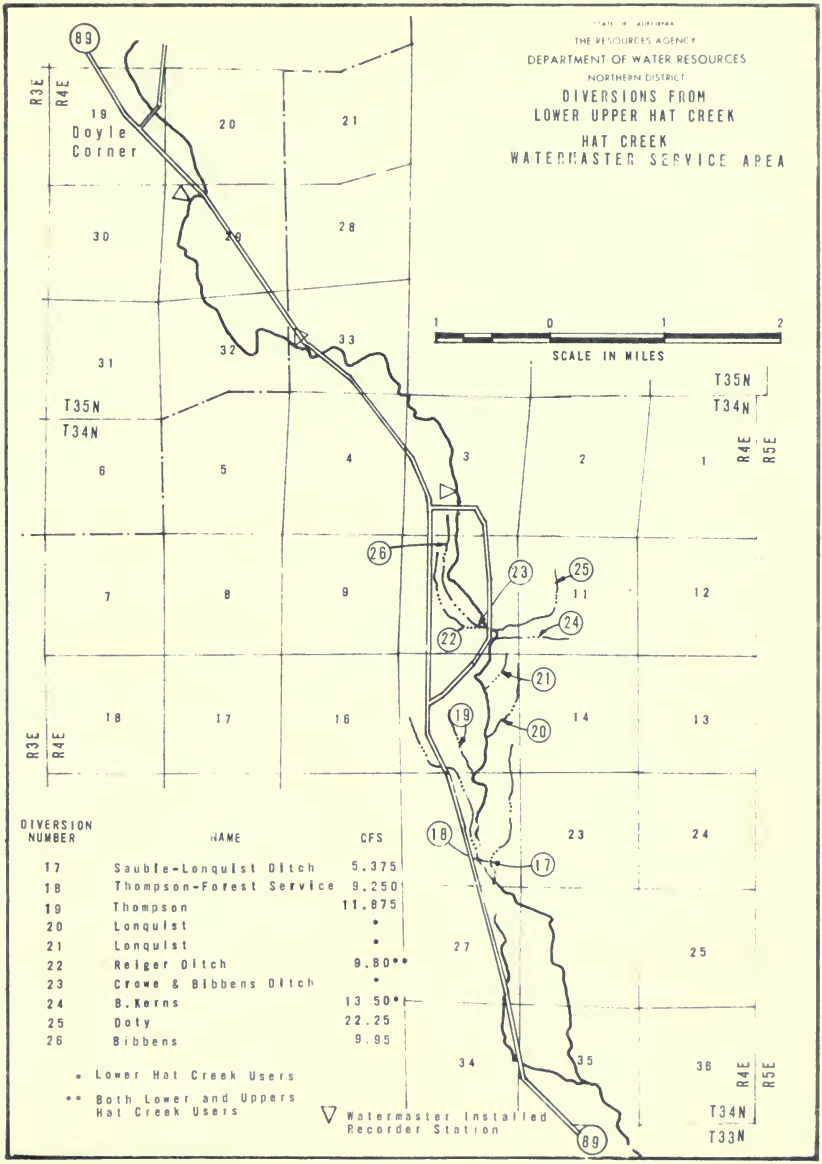
TABLE 15

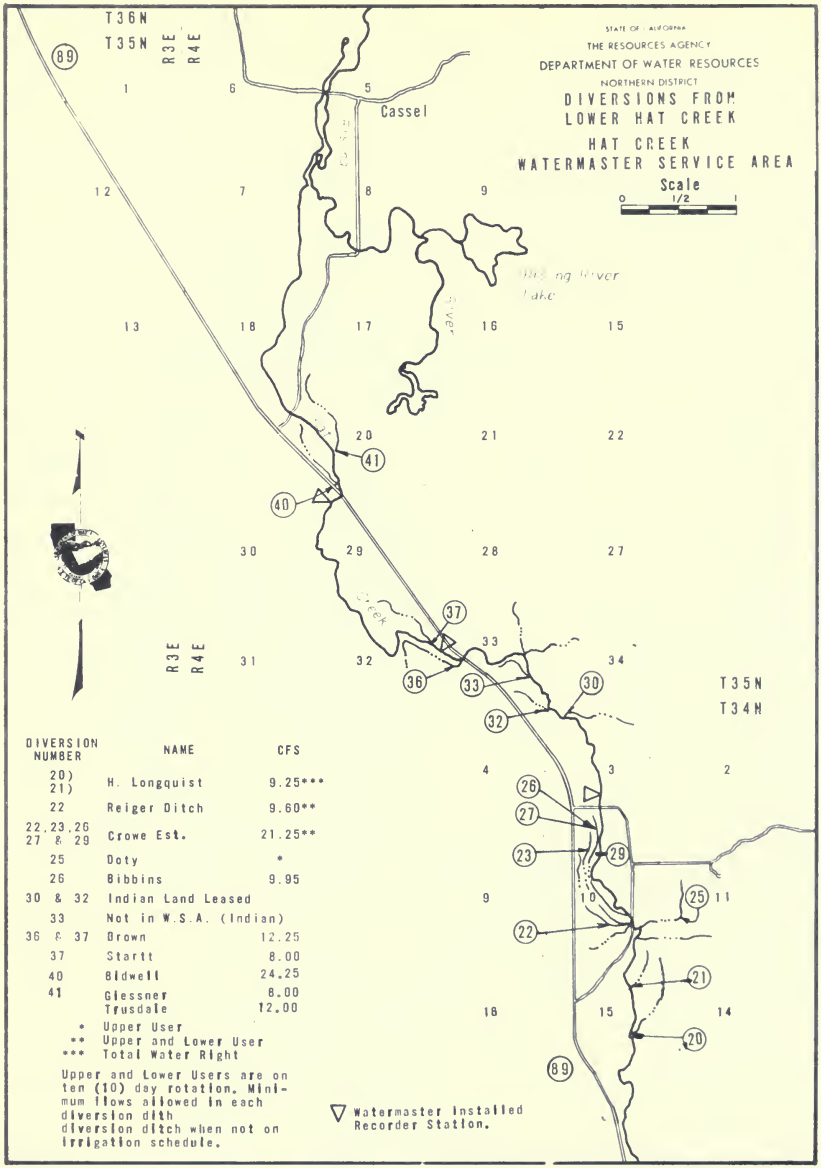
HAT CREEK NEAR HAT CREEK

Day	March	April	May	June	July	August	September	Day
1	147	147	168	253	163	150	136	1
2	147	147	171	237	152	150	135	2
3	146	147	174	228	153	150	136	3
4	146	148	177	223	149	150	136	4
5	146	149	170	223	149	150	135	5
6	146	150	166	227	150	149	135	6
7	143	150	171	227	150	150	144	7
8	144	150	177	228	149	148	146	8
9	144	150	183	225	149	140	145	9
10	149	150	193	217	154	140	145	10
11	147	153	203	208	158	139	145	11
12	146	155	212	204	157	137	145	12
13	146	157	228	202	157	138	145	13
14	144	154	240	196	156	144	144	14
15	144	155	251	190	157	150	143	15
16	144	155	262	186	157	150	143	16
17	144	158	279	184	162	149	143	17
18	144	155	281	179	160	149	144	18
19	144	153	294	177	156	148	152	19
20	144	152	279	181	145	148	147	20
21	144	153	262	186	148	147	147	21
22	143	154	256	186	151	147	150	22
23	142	157	253	186	147	147	148	23
24	146	160	287	181	146	148	147	24
25	148	163	316	181	144	148	145	25
26	148	171	262	180	144	147	145	26
27	148	175	247	179	143	146	145	27
28	148	171	253	177	138	142	144	28
29	147	171	258	176	139	138	144	29
30	148	170	266	172	148	136	144	30
31	148		271		150	135		31
Mean	146	156	233	200	151	145	143	Mean
Runoff In Acre-Feet	8960	9280	14300	11900	9280	8950	8540	Runoff In Acre-Feet


STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
INDEX SHEET
HAT CREEK
WATERMASTER SERVICE AREA
Scale
0
1
299
99
Crystal Lake
to Fall River Mills
Cassel
Indicates Detail Maps
9c
U.C. Observatory Road
9b
Channel
Wilcox
Road
9a
Old Station P.O.


STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
UPPER UPPER HAT CREEK
HAT CREEK
WATERMASTER SERVICE AREA
SCALE IN MILES
1 0 1 2
R4E
R5E
T34N
T33N
T32N
Wilcox Road
Hat Creek
Hat Harriet
DIVERSION NUMBER | NAME | CFS
1 | Hat Creek Properties | 6.895
8 | Consteroine | 0.560
3 | Delano | 2.954
D | Smith | 7.781
3,D | (Total Allottment for Delano & Smith) | 10.356
4 | G. Parrish | 3.750
F | Zachary Ditch | 0.960*
5 | Brown | 0.500
6,7,8 | Wilcox | 18.800
8 | Brown (not in WSA) | 1.125
8,9 | Ryon | 20.575
9 | Patton | 2.125
G,H | Sites (Total Water Right) | 0.500*
11 | Valentine | 0.858
12 | Valentine | 0.767
13,14 15 | Norri | 3.500
J | Dunwoody | 0.500*
* Continuous flow allotments are designated by alphabetical diversions.
Permanent Record Station Upper and Lower Users are on ten day rotation Minimum flows allowed in each diversion ditch when not on irrigation schedule
Watermaster Installed Recorder Station.


STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
LOWER UPPER HAT CREEK
HAT CREEK
WATERMASTER SERVICE AREA
Doyle Corner
SCALE IN MILES
1 0 1 2
T35N
T34N
R3E
R4E
R5E
T33N
DIVERSION NUMBER
NAME
CFS
17 Sauble-Lonquist Ditch 5.375
18 Thompson-Forest Service 9.250
19 Thompson 11.875
20 Lonquist •
21 Lonquist •
22 Reiger Ditch 9.80••
23 Crowe & Bibbens Ditch •
24 B.Kerns 13 50•
25 Doty 22.25
26 Bibbens 9.95
• Lower Hat Creek Users
•• Both Lower and Uppers Hat Creek Users
Watermaster Installed Recorder Station



DIVERSION NUMBER	NAME	CFS
20) 21)	H. Longquist	9.25***
22	Reiger Ditch	9.60**
22,23,26 27 & 29	Crowe Est.	21.25**
25	Doty	*
26	Bibbins	9.95
30 & 32	Indian Land Leased	
33	Not in W.S.A. (Indian)	
36 & 37	Brown	12.25
37	Startt	8.00
40	Bidwell	24.25
41	Giessner Trusdale	8.00 12.00

* Upper User
** Upper and Lower User
*** Total Water Right

Upper and Lower Users are on ten (10) day rotation. Minimum flows allowed in each diversion dith diversion ditch when not on irrigation schedule.

Indian Creek Watermaster Service Area

The Indian Creek service area is located in the north central part of Plumas County in the vicinity of the town of Greenville.

The major sources of supply in the service area are Indian Creek and two major tributaries, Wolf Creek and Lights Creek. Indian Creek and its minor tributaries rise in the mountains east of the service area. It then flows through Genesee Valley and through Indian Valley past the towns of Taylorsville and Crescent Mills to its confluence with the North Fork Feather River. Indian Creek is joined on the north by Lights Creek in the southeast part of Indian Valley and by Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, an irregular-shaped area of about 20 square miles. The average elevation is about 3,500 feet.

Maps of the whole area and of each major stream system within the Indian Creek service area are presented as Figures 10 through 10c, pages 55 through 60.

Basis of Service

The Indian Creek watermaster service area was created on Feburary 19, 1951, to include, with certain exceptions, the water rights set forth in Decree No. 4185, entered December 19, 1950, by the Superior Court of Plumas County, and the rights under Permit 7665 issued in approval of Application 12642 subsequent to entry of the decree. The statutory proceeding leading to the decree was entitled "In the Matter of the Determination of the Rights of the Various Claimants to the Water of Indian Creek Stream System in Plumas County, California".

The service area has been amended twice. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished.

There are currently 45 water right owners in the service area with total allotments amounting to 97.015 cubic feet per second.

The Indian Creek decree establishes three priority classes for each of the major stream systems within the service area.

Water Supply

The water supply in the Indian Creek service area is derived primarily from snowmelt runoff with springs and seepage maintaining some late summer flows. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1. Indian and Lights Creeks, with the exception of some tributaries, have sufficient flow to supply all allotments until July 1. After these dates, the flow steadily decreases throughout the season until by the end of August only a small portion of allotments is available.

A record of the daily mean discharge of Indian Creek near Taylorsville, where Indian Creek enters the valley, is presented in Table 16, page 56.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are constructed in the stream channels to divert water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley. A few sprinkler systems are also in use.

1973 Distribution

Watermaster service began in the Indian Creek service area on April 5 and continued until September 30 with Harvey M. Jorgensen, Water Resources Engineering Associate, as watermaster.

The available supply in the service area was about average during the season.

Wolf Creek. The available water supply of Wolf Creek was sufficient to satisfy all allotments (three priorities) until July 20. The streamflow gradually decreased until only first priority allotments were being served on September 1.

Lights Creek and Tributaries. The available water supply of Lights Creek was sufficient to satisfy all allotments (three priorities) until July 15, when the surface flow at the county road stopped. The available water supply of Cooks Creek satisfied all allotments until July 20.

Indian Creek. The available water supply of Indian Creek was sufficient to satisfy all allotments (three priorities) until July 15. Sufficient underflow occurred below the Mill Race Diversion Dam to meet allotments of downstream users.

Special Occurrences

During the season it was necessary to install Sparling meter control devices in Diversions 36 and 55. Orifice plate control devices were installed in Diversion 54 to facilitate the release of water from Antelope Lake past these diversion points.

Rehabilitation of diversion structures on the lower turnouts of the Mill Race Ditch system was accomplished during the season.

Assistance was rendered to users of the Diversion Dam at Diversions 69 and 70 on Wolf Creek to try and resolve problems of rebuilding this structure.

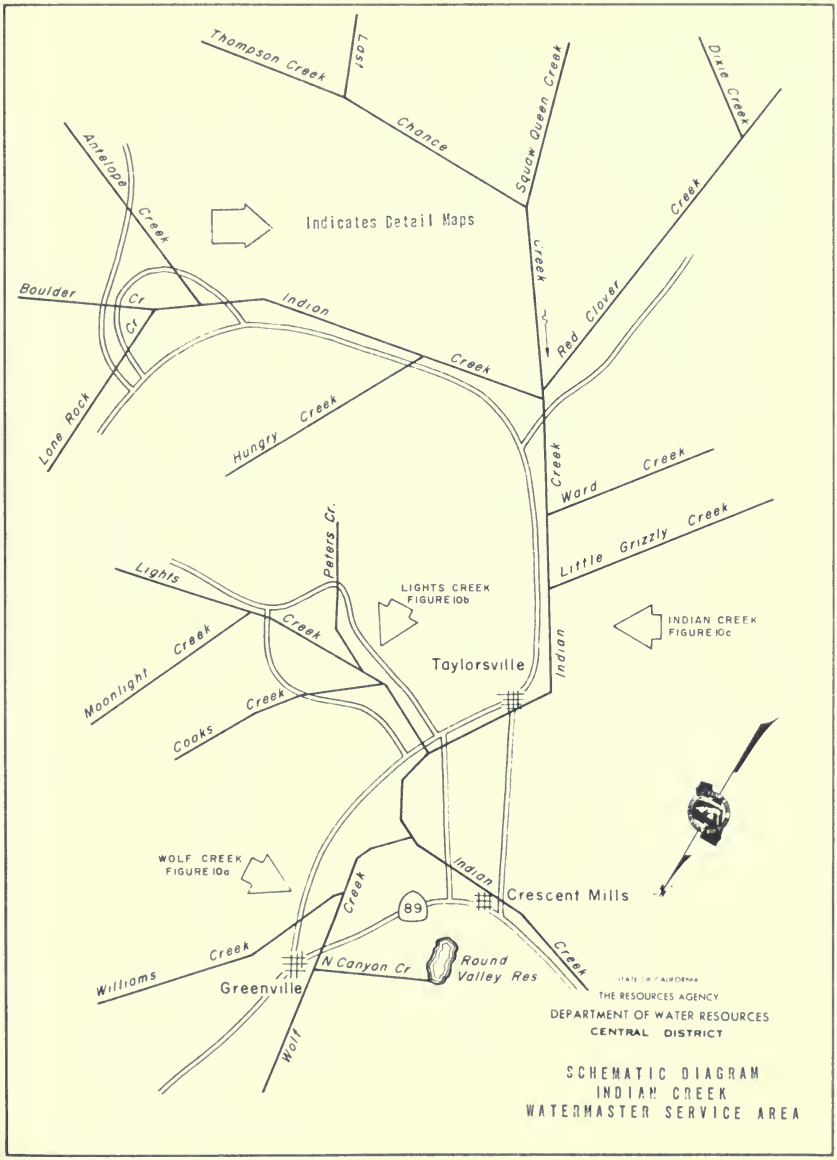
INDIAN CREEK WATERMASTER SERVICE AREA

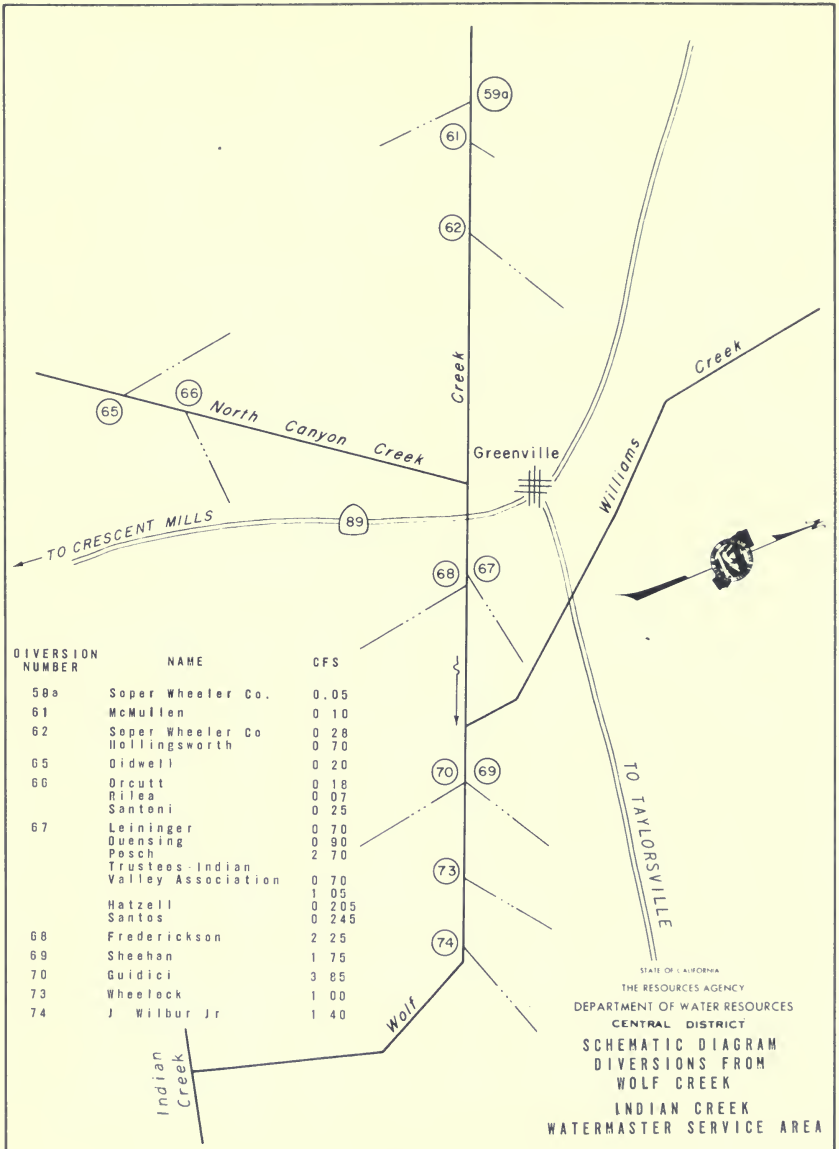
1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 16

INDIAN CREEK NEAR TAYLORSVILLE

Day	March	April	May	June	July	August	September	Day
1	780	655	829	300	75	45	38	1
2	668	565	771	271	73	43	44	2
3	570	525	771	236	66	42	45	3
4	498	611	775	208	62	41	45	4
5	432	845	784	190	59	40	45	5
6	408	1100	761	177	60	39	45	6
7	366	1400	673	166	60	38	45	7
8	349	1090	646	156	60	39	45	8
9	331	1170	632	146	59	39	45	9
10	388	1270	650	140	56	40	45	10
11	611	1300	686	133	56	41	45	11
12	537	1350	741	141	55	41	44	12
13	475	1300	865	136	53	39	40	13
14	404	1140	875	132	51	38	37	14
15	375	1130	855	131	51	40	37	15
16	396	1010	839	128	52	39	37	16
17	459	1020	824	125	52	37	37	17
18	437	970	761	117	52	37	38	18
19	447	880	713	108	49	35	39	19
20	433	800	603	103	47	31	51	20
21	386	732	533	99	45	32	45	21
22	373	722	460	89	44	32	42	22
23	386	804	413	89	44	35	46	23
24	438	875	410	89	44	38	46	24
25	611	898	392	89	45	40	46	25
26	790	964	356	88	45	43	45	26
27	850	1060	325	83	45	53	42	27
28	677	1100	300	80	45	47	42	28
29	557	1060	280	78	45	44	41	29
30	632	959	303	76	46	38	40	30
31	650		334		47	36		31
Mean	507	977	618	137	53.0	39.4	42.7	Mean
Runoff In Acre-Feet	31170	58120	38000	8140	3259	2424	2543	Runoff In Acre-Feet

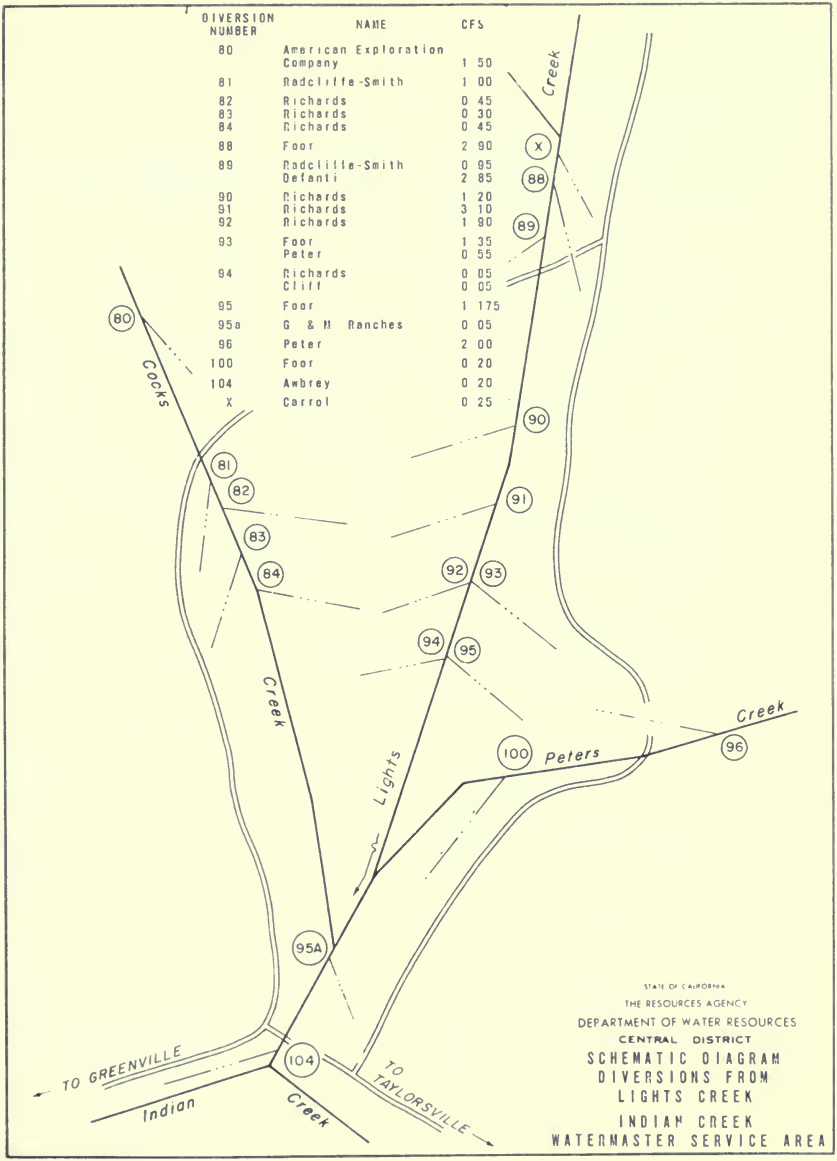

Thompson Creek
Lost
Chance
Squaw Queen Creek
Dixie Creek
Antelope Creek
Indicates Detail Maps
Boulder Cr
Indian Creek
Red Clover Creek
Lone Rock
Hungry Creek
Ward Creek
Little Grizzly Creek
Peters Cr.
Lights Creek
LIGHTS CREEK FIGURE 10b
INDIAN CREEK FIGURE 10c
Moonlight Creek
Taylorsville
Cooks Creek
WOLF CREEK FIGURE 10a
Crescent Mills
89
Williams Creek
N Canyon Cr
Round Valley Res
Greenville
Wolf
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT
SCHEMATIC DIAGRAM
INDIAN CREEK
WATERMASTER SERVICE AREA

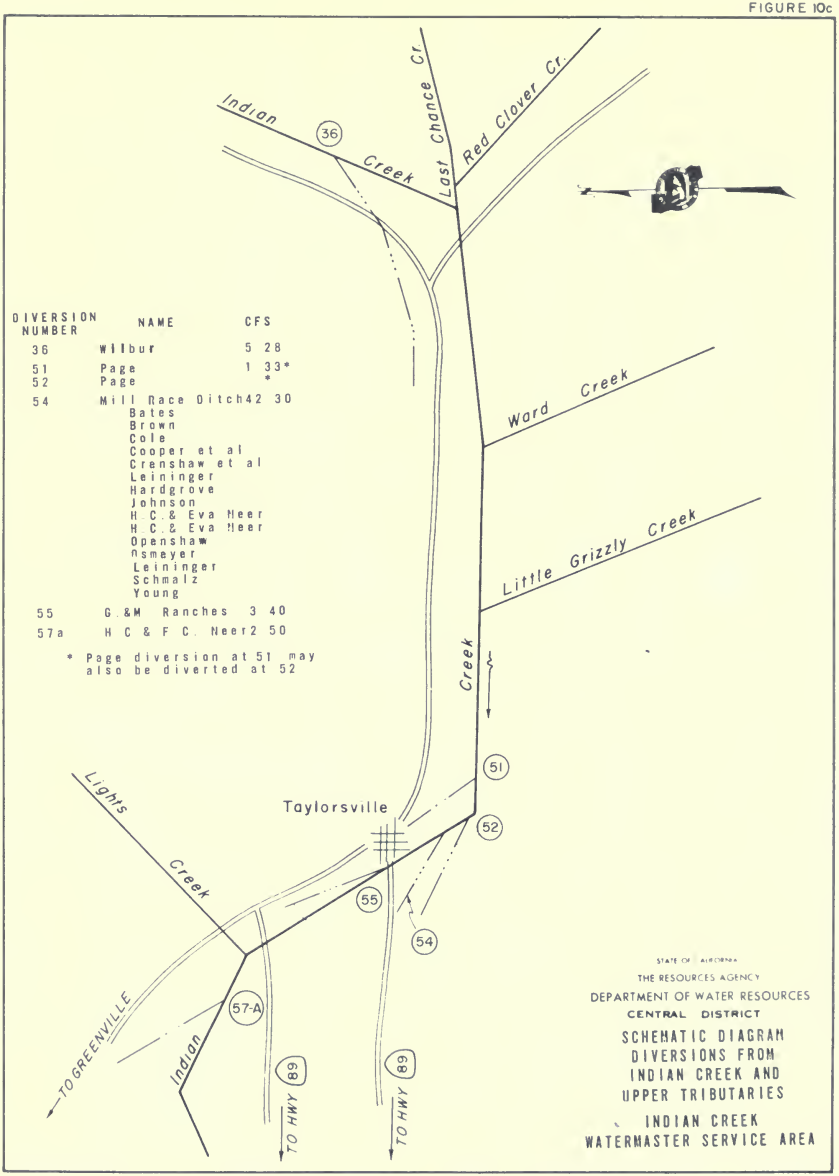


DIVERSION NUMBER	NAME	CFS
59a	Soper Wheeler Co.	0.05
61	McMullen	0 10
62	Soper Wheeler Co	0 28
	Hollingsworth	0 70
65	Oidwell	0 20
66	Orcutt	0 18
	Rilea	0 07
	Santoni	0 25
67	Leininger	0 70
	Duensing	0 90
	Pasch	2 70
	Trustees - Indian Valley Association	0 70
		1 05
	Hatzell	0 205
	Santos	0 245
68	Frederickson	2 25
69	Sheehan	1 75
70	Guidici	3 85
73	Wheeleck	1 00
74	J Wilbur Jr	1 40

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT

SCHEMATIC DIAGRAM
DIVERSIONS FROM
WOLF CREEK
INDIAN CREEK
WATERMASTER SERVICE AREA


DIVERSION NUMBER
NAME
CFS
80 American Exploration Company 1 50
81 Radcliffe-Smith 1 00
82 Richards 0 45
83 Richards 0 30
84 Richards 0 45
88 Foor 2 90
89 Radcliffe-Smith 0 95
Defanti 2 85
90 Richards 1 20
91 Richards 3 10
92 Richards 1 90
93 Foor 1 35
Peter 0 55
94 Richards 0 05
Cliff 0 05
95 Foor 1 175
95a G & M Ranches 0 05
96 Peter 2 00
100 Foor 0 20
104 Awbrey 0 20
X Carrol 0 25
Creek
X
88
89
80
Cooks
90
81
82
91
83
84
92
93
94
95
Creek
Lights
Creek
100
Peters
96
95A
TO GREENVILLE
104
Indian
Creek
TO TAYLORSVILLE
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT
SCHEMATIC DIAGRAM
DIVERSIONS FROM
LIGHTS CREEK
INDIAN CREEK
WATERMASTER SERVICE AREA



DIVERSION NUMBER	NAME	CFS
36	Wilbur	5 28
51	Page	1 33*
52	Page	*
54	Mill Race Ditch	42 30
	Bates	
	Brown	
	Cole	
	Cooper et al	
	Crenshaw et al	
	Leininger	
	Hardgrove	
	Johnson	
	H.C.& Eva Neer	
	H.C.& Eva Neer	
	Openshaw	
	Osmeyer	
	Leininger	
	Schmalz	
	Young	
55	G.&M. Ranches	3 40
57a	H.C.& F.C. Neer	2 50

* Page diversion at 51 may also be diverted at 52

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
CENTRAL DISTRICT

SCHEMATIC DIAGRAM
DIVERSIONS FROM
INDIAN CREEK AND
UPPER TRIBUTARIES

INDIAN CREEK
WATERMASTER SERVICE AREA

Middle Fork Feather River Watermaster Service Area

The Middle Fork Feather River service area is located in and around Sierra Valley, a plateau area on the west slope of the Sierra Nevada Mountains in the eastern portion of Sierra and Plumas Counties.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in the Sierra Valley. The area is comprised of five major stream groups. These groups, starting in the northeast corner of the valley and proceeding in a clockwise direction, are Little Last Chance Creek, Smithneck Creek, Webber Creek and tributaries, West Side Canal, and Fletcher Creek and Spring Channels. The Middle Fork Feather River flows generally north for approximately 15 miles through Sierra Valley. It then flows out of the valley in a westerly direction near Beckwourth. The major place of use is in Sierra Valley, which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

Maps of the Middle Fork Feather River service area are presented as Figures 11 through 11K, pages 64 through 75.

Basis of Service

The Middle Fork Feather River watermaster service area was created on March 29, 1940, to include, with the exception of certain tributaries and springs, all water rights set forth in Decree No. 3095 entered in the Middle Fork Feather River statutory adjudication proceeding on January 19, 1940, Superior Court, Plumas County.

The decree establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek - eight; Smithneck Creek - five; West Side Canal Group - five; Fletcher Creek and Spring Channels - three; Webber Creek and tributaries - six; and Sierra Valley Water Company - one.

The service area has been amended three times to include and exclude certain water rights. Watermaster service has been provided during each irrigation season since the service area was created and annual reports have been prepared to show the work accomplished.

There are, currently, 101 water right owners in the service area with total allotments amounting to 371.565 cubic feet per second.

Water Supply

The major water supply in the Middle Fork Feather River service area is derived from snowmelt runoff, with minor flow from springs and from supplemental stored and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam which was constructed by the Department of Water Resources in 1961. Stored water is released and used as needed under the provisions of an annual contract.

Smithneck Creek flow is normally sufficient to supply all allotments until about the middle of May. It then decreases until about June 1 and only first and second priority allotments are then available for the remainder of the season.

The natural flow of Webber Creek is normally sufficient to supply all allotments until the middle of May. At that time up to 60 cubic feet per second is diverted from the Little Truckee River to supplement the flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then

into Webber Creek, via Cold Stream, for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly during July, producing only a small quantity during the latter part of the season.

The West Side Canal streams normally supply all allotments until the first part of June. The flow then gradually declines throughout the season.

The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. The flow then gradually declines for the remainder of the season.

Records of the daily mean discharge of Little Truckee Ditch and the Middle Fork Feather River near Portola are presented in Tables 17 and 18, page 63.

Method of Distribution

Wild flooding is employed by the majority of the water users to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

1973 Distribution

Watermaster service began April 1 in the Middle Fork Feather River service area and continued until September 30. Joe Nessler, Water Resources Engineering Associate, was Supervising Watermaster during this period. Conrad Lahr, Water Resources Technician II, assisted as Deputy Watermaster. A near-average water year prevailed in the service area although a lack of normal spring rain was a detrimental factor.

Little Last Chance Creek. Frenchman Dam and Reservoir began its twelfth season of operation. An annual contract concerning storage, distribution, and sale of water was again negotiated with the Last Chance Creek Water District. Delivery and distribution of water was made in accordance with the provisions of the contract and the instructions of the District's Board of Directors.

Smithneck Creek. The available water supply was sufficient to satisfy all allotments (five priorities) until about May 20. The flow dropped to about 5 cubic feet per second by July 20. A 2-week rotation schedule was started May 29 and continued for 8 weeks until only stockwater was available.

Webber Creek and Tributaries. The natural flow of Webber Creek was sufficient to supply all allotments (six priorities) until about the first of June. It then decreased gradually until about 25 percent of second priority allotments were being served at the end of the season. Importation of water from the Little Truckee River began on May 29, supplementing the natural flow of Webber Creek to help satisfy all allotments of the Sierra Valley Water Company shareholders (one priority). A total of 3,824 acre-feet of water was diverted through the Little Truckee Ditch up to September 30. This diversion provided sufficient water until about July 10. A lighter than normal demand still exists in this stream system due to damaged diversion facilities.

West Side Canal Group. The available water supply in the West Side Canal Group, consisting of Hamlin, Miller, and Turner Creeks, was sufficient to satisfy all allotments (five priorities) until the latter part of July. A 3-week rotation schedule was started July 5 on Turner Creek for the users below Highway 49-89. Rotation continued for the remainder of the irrigation season.

Fletcher Creek and Spring Channels. Ample water was available to satisfy all allotments until mid-June. An 18-day rotation schedule was set up on Fletcher Creek and continued for the remainder of the season. Demand for water was very high in this system due to new owners and changing of crops.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 17

LITTLE TRUCKEE DITCH AT HEAD

Day	March	April	May	June	July	August	September	Day
1				54	33	5.7	2.6	1
2				52	31	5.1	2.6	2
3				49	28	5.1	2.8	3
4				46	26	5.4	2.4	4
5				47	23	4.9	2.3	5
6				47	21	4.4	2.1	6
7				46	18	4.1	2.1	7
8				46	16	4.1	2.1	8
9				46	18	3.9	2.1	9
10				45	23	3.6	2.1	10
11				42	21	3.4	2.1	11
12				39	20	3.0	2.1	12
13				36	22	3.0	2.1	13
14				31	19	2.8	1.9	14
15				27	18	2.6	1.9	15
16				24	22	2.4	1.9	16
17				21	22	2.3	2.1	17
18				21	18	2.1	2.1	18
19				20	16	2.1	2.1	19
20				21	14	2.1	4.1	20
21				28	13	2.1	5.1	21
22				35	12	2.1	3.2	22
23				35	11	2.1	3.0	23
24				35	10	2.1	3.2	24
25				35	8.6	2.4	3.6	25
26				36	8.2	3.4	3.2	26
27				36	7.9	7.6	3.2	27
28				36	8.2	4.4	2.6	28
29				35	7.9	3.4	2.4	29
30			54*	34	6.7	3.0	2.3	30
31			56		6.2	2.6		31
Mean			55.0	36.8	17.1	3.5	2.6	Mean
Runoff In Acre-Feet			218	2192	1049	212	153	Runoff In Acre-Feet

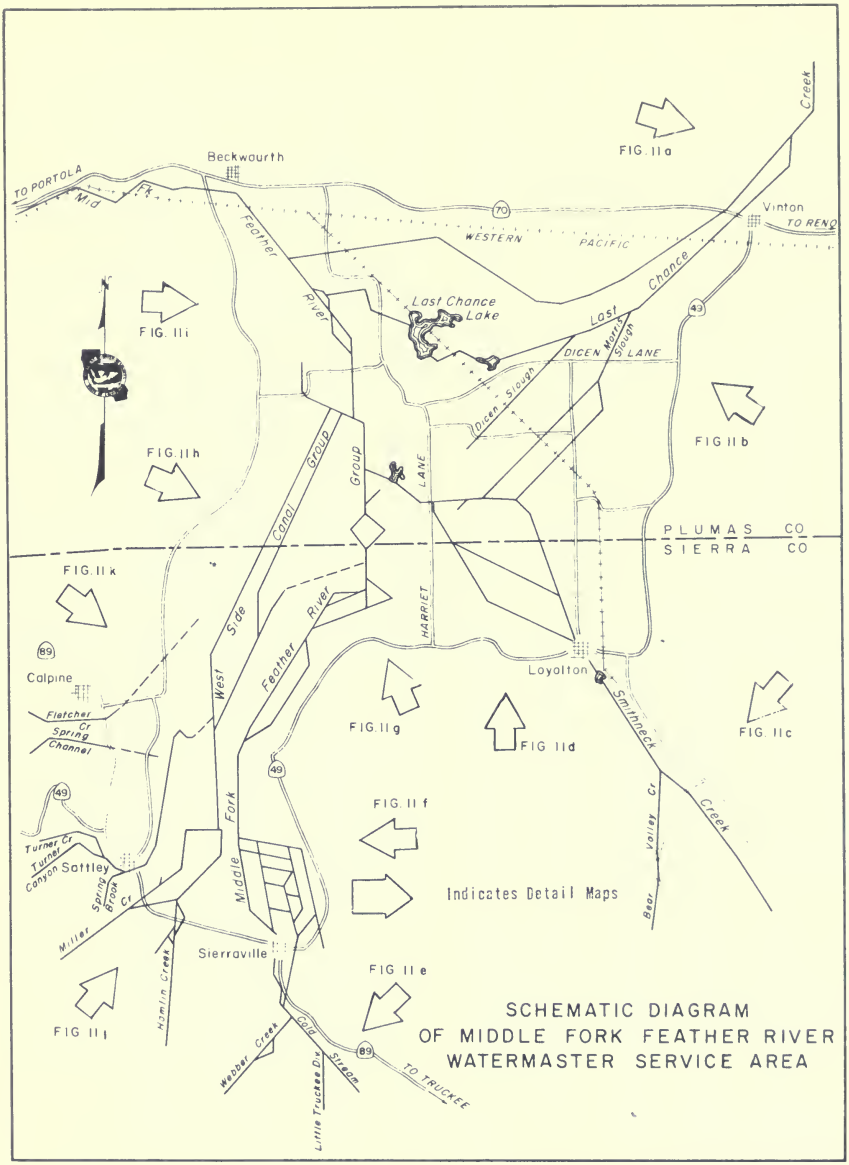
* Beginning of Flow

TABLE 18

MIDDLE FORK FEATHER RIVER AT PORTOLA

Day	March	April	May	June	July	August	September	Day
1	1940	281	245	126	27	12	73	1
2	1730	273	240	126	28	12	16	2
3	1410	259	197	139	29	14	15	3
4	1040	240	180	144	28	16	15	4
5	783	225	190	152	27	16	15	5
6	658	217	215	158	23	16	14	6
7	583	223	220	151	20	13	15	7
8	544	272	220	136	20	4.3	15	8
9	523	250	199	118	18	14	15	9
10	510	268	186	103	18	15	14	10
11	600	275	172	91	18	15	11	11
12	724	284	160	82	17	13	11	12
13	610	295	152	75	18	10	11	13
14	466	308	145	69	16	10	11	14
15	407	316	138	61	15	10	11	15
16	359	324	141	49	14	9.7	13	16
17	303	325	140	44	16	9.4	15	17
18	293	310	142	47	17	9.7	15	18
19	286	292	154	60	17	10	15	19
20	278	265	153	52	17	10	16	20
21	268	218	150	49	16	11	15	21
22	254	182	144	41	16	12	14	22
23	237	199	142	46	19	15	15	23
24	222	203	120	41	20	16	15	24
25	211	161	112	39	16	17	15	25
26	218	166	118	35	13	17	17	26
27	234	118	118	30	12	16	18	27
28	253	197	122	29	12	16	18	28
29	263	209	121	28	13	15	19	29
30	264	226	126	27	12	15	20	30
31	274		136		12	43		31
Mean	540	246	161	76.3	18.2	13.0	16.7	Mean
Runoff In Acre-Feat	33220	14640	9817	4657	1119	857	996	Runoff In Acre-Feet

FIGURE 11



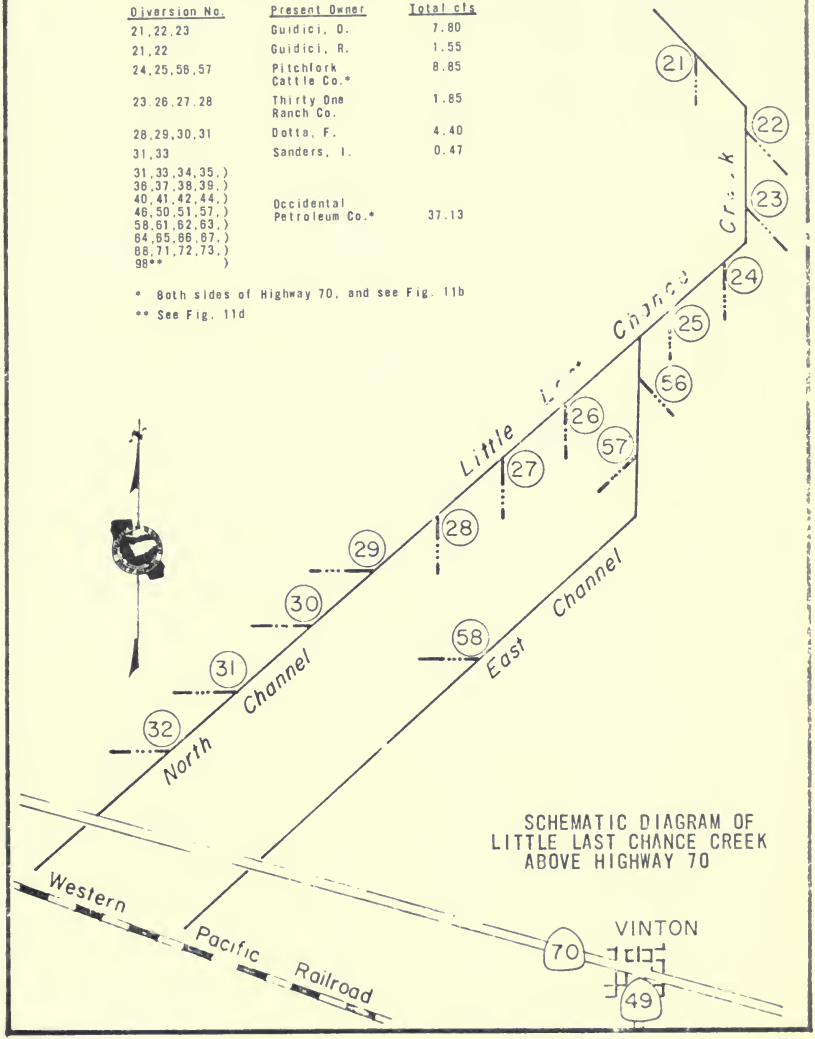
SCHEMATIC DIAGRAM
OF MIDDLE FORK FEATHER RIVER
WATERMASTER SERVICE AREA

ALLOCATIONS FROM LITTLE LAST CHANCE CREEK
ABOVE HIGHWAY 70

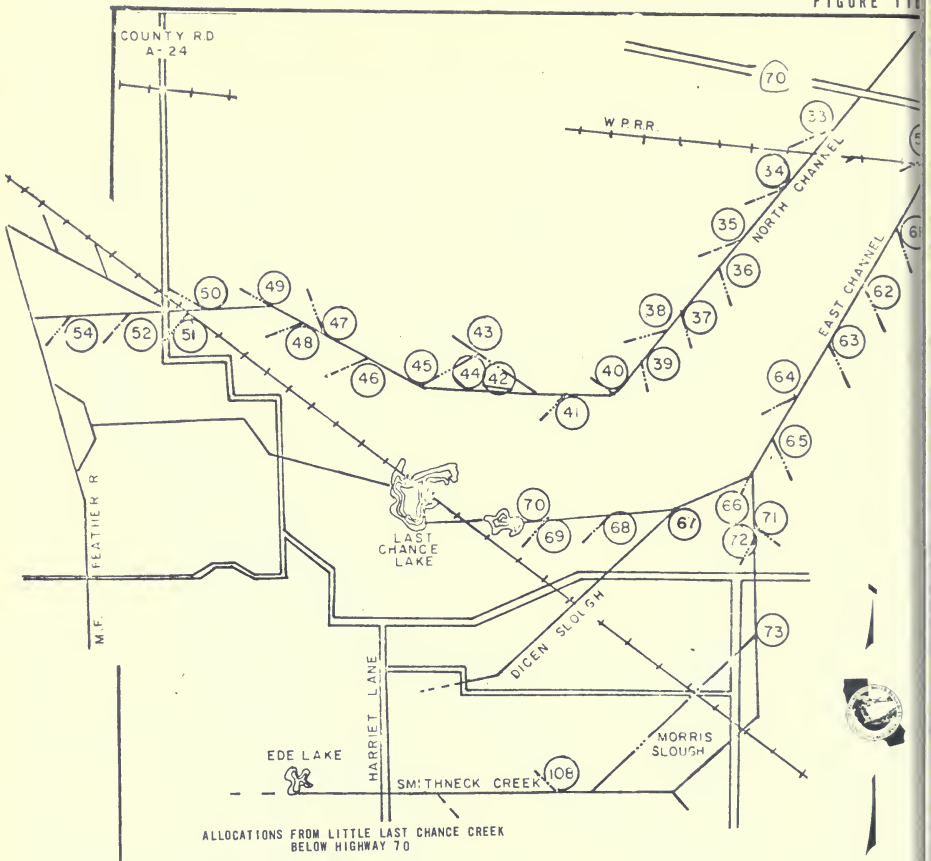
Diversion No.	Present Owner	Total cfs
21,22,23	Guidici, O.	7.80
21,22	Guidici, R.	1.55
24,25,56,57	Pitchfork Cattle Co.*	8.85
23,26,27,28	Thirty One Ranch Co.	1.85
28,29,30,31	Dotta, F.	4.40
31,33	Sanders, I.	0.47
31,33,34,35,) 36,37,38,39,) 40,41,42,44,) 46,50,51,57,) 58,61,62,63,) 64,65,66,67,) 68,71,72,73,) 98**)	Occidental Petroleum Co.*	37.13

* Both sides of Highway 70, and see Fig. 11b

** See Fig. 11d



SCHEMATIC DIAGRAM OF
LITTLE LAST CHANCE CREEK
ABOVE HIGHWAY 70

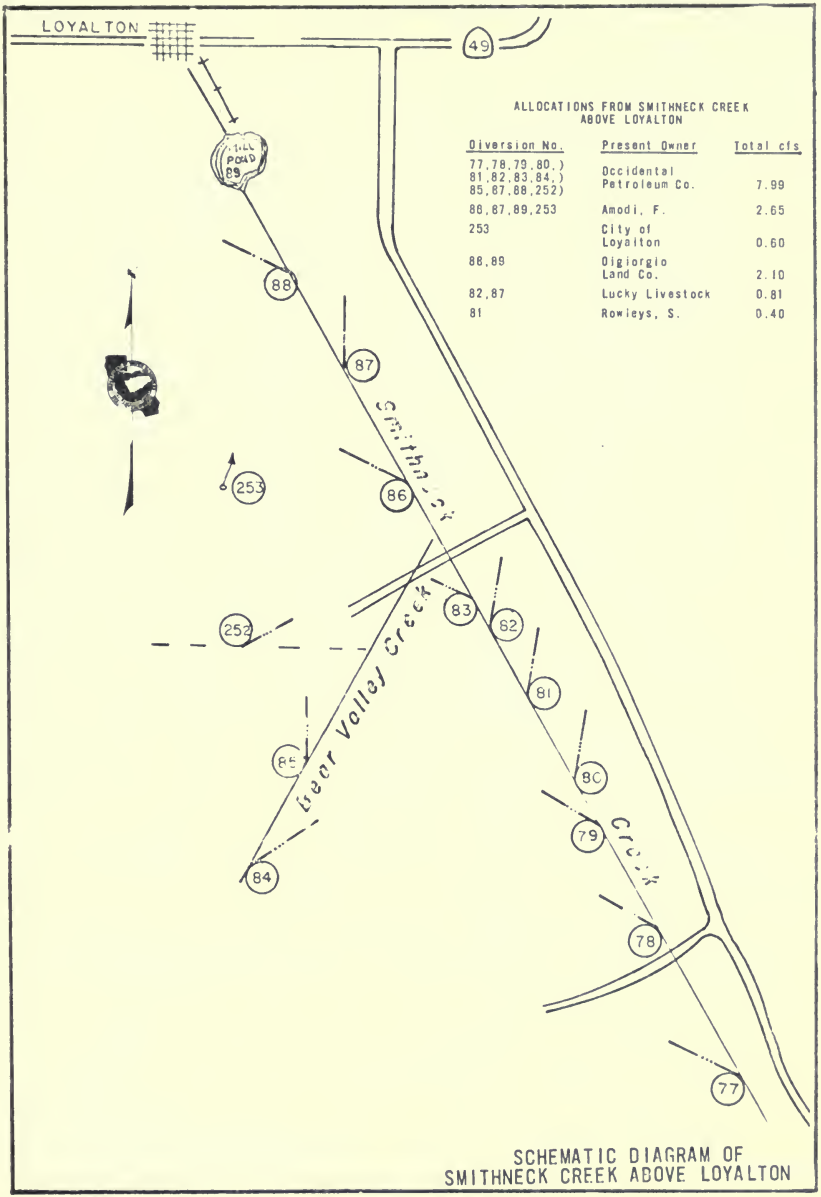


ALLOCATIONS FROM LITTLE LAST CHANCE CREEK BELOW HIGHWAY 70

Diversion No.	Present Owner	Total cfs
31*,32*,57*,) 58*,59,60)	Ramelli, T.	3.30
57,58,59,60	Ayoob, G.	4.05
43,44,45,67, 68,69,72,79	Roberti, E.	9.14
70	Rammelli, M.	0.55
70	Wiley, J.	0.20
70	Carmicheal, F.	0.10
47,48,49	Bonta, S.	4.45
52,53	Maddalena, L.	1.20
54,55	Noble, P.	0.45
67,72	Humphrey, M.	1.68
67,108	Hage, J.	0.20

* See Fig. 11a for location of diversions 33-42, 46, 50, 51, 61-68, 71, 72, 73, 98 (Occidental Petroleum)

SCHEMATIC DIAGRAM OF LITTLE LAST CHANCE CREEK BELOW HIGHWAY 70

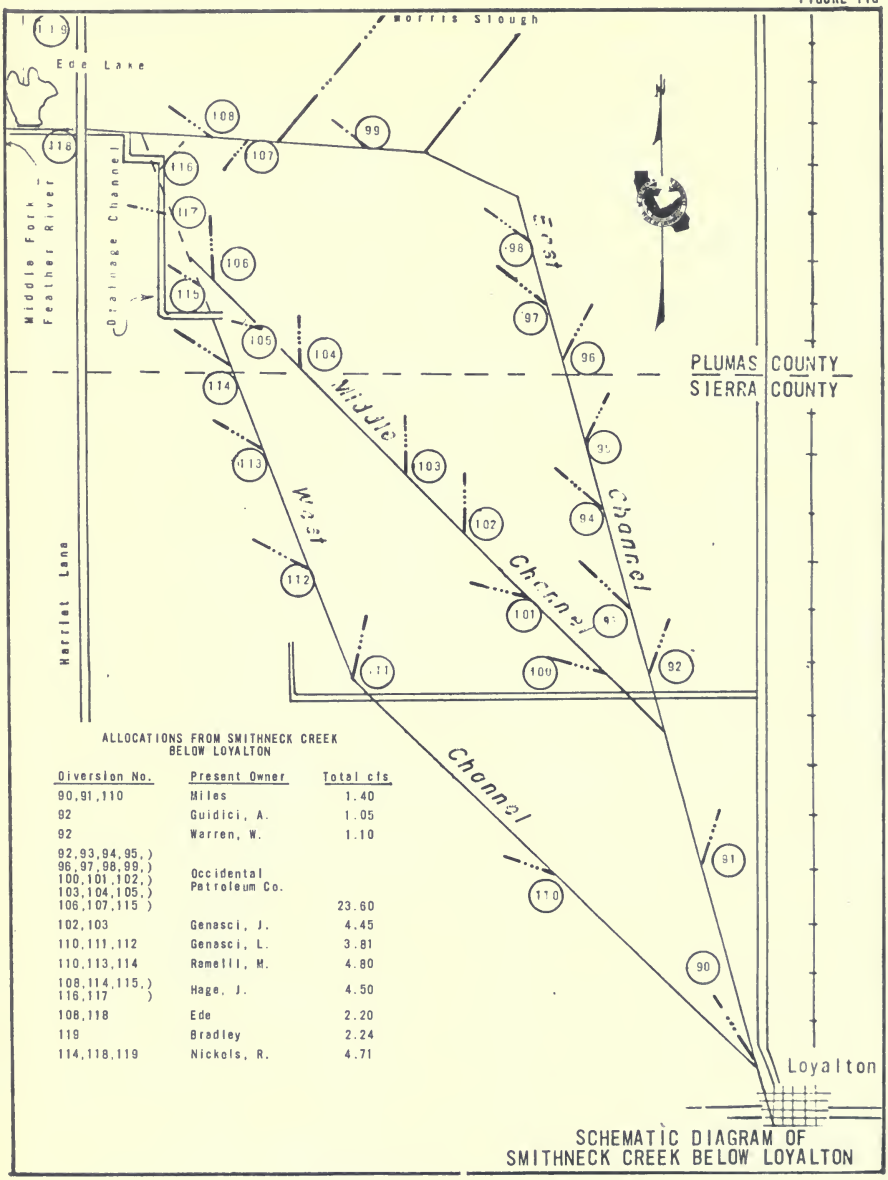


ALLOCATIONS FROM SMITHNECK CREEK ABOVE LOYALTON

Diversion No.	Present Owner	Total cfs
77,78,79,80,) 81,82,83,84,) 85,87,88,252)	Occidental Petroleum Co.	7.99
86,87,89,253	Amodi, F.	2.65
253	City of Loyalton	0.60
88,89	Digiorgio Land Co.	2.10
82,87	Lucky Livestock	0.81
81	Rowleys, S.	0.40

SCHEMATIC DIAGRAM OF SMITHNECK CREEK ABOVE LOYALTON

FIGURE IId



ALLOCATIONS FROM SMITHNECK CREEK BELOW LOYALTON

Diversion No.	Present Owner	Total cfs
90,91,110	Miles	1.40
92	Guidici, A.	1.05
92	Warren, W.	1.10
92,93,94,95,) 96,97,98,99,) 100,101,102,) 103,104,105,) 106,107,115)	Occidental Petroleum Co.	23.60
102,103	Genasci, J.	4.45
110,111,112	Genasci, L.	3.81
110,113,114	Remelli, M.	4.80
108,114,115,) 116,117)	Hage, J.	4.50
108,118	Ede	2.20
119	Bradley	2.24
114,118,119	Nickols, R.	4.71

SCHEMATIC DIAGRAM OF
SMITHNECK CREEK BELOW LOYALTON

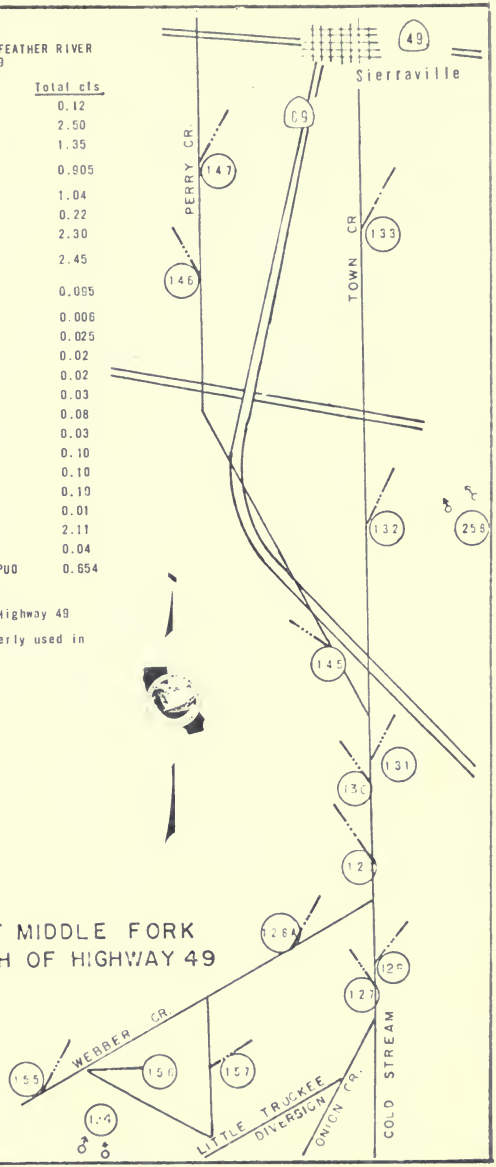
ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER
SOUTH OF HIGHWAY 49

Diversion No.	Present Owner	Total cfs
127	Morgan	0.12
155	Amodei, J.	2.50
133,156,157	McKinney	1.35
128,128A	Johnson, A. & Stodiek	0.905
133,134	Johnson, L.	1.04
134*	Johnson, S.	0.22
129*	G&M Ranches	2.30
131,132,145,) 258)	Pitchfork Cattle Co.	2.45
128,128A	Marin Girl Scouts	0.095
130	LaCosta, P.	0.006
130	Dellera, K.	0.025
145	Heinsen, A.	0.02
133	Goodrich, C.	0.02
134	Griffin, T.	0.03
134	Skutt, J.	0.08
134	West, H.	0.03
145	White, E.	0.10
145	Wright, I.	0.10
134	Roscoe, P.	0.19
134	Savage, H&E.	0.01
129,133**	Webber, G.	2.11
145	Scudder, N.	0.04
R. R. Springs	Sierraville PUD	0.654

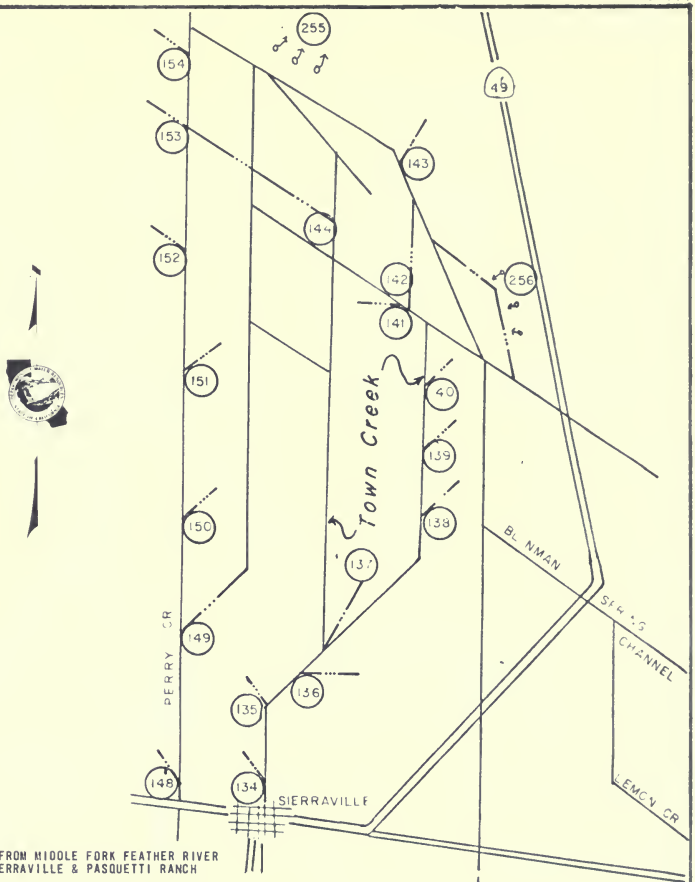
* Both sides of Highway 49

** Other allocations north of Highway 49

Rights under Div. 134, formerly used in Sierraville



SCHEMATIC DIAGRAM OF MIDDLE FORK FEATHER RIVER SOUTH OF HIGHWAY 49



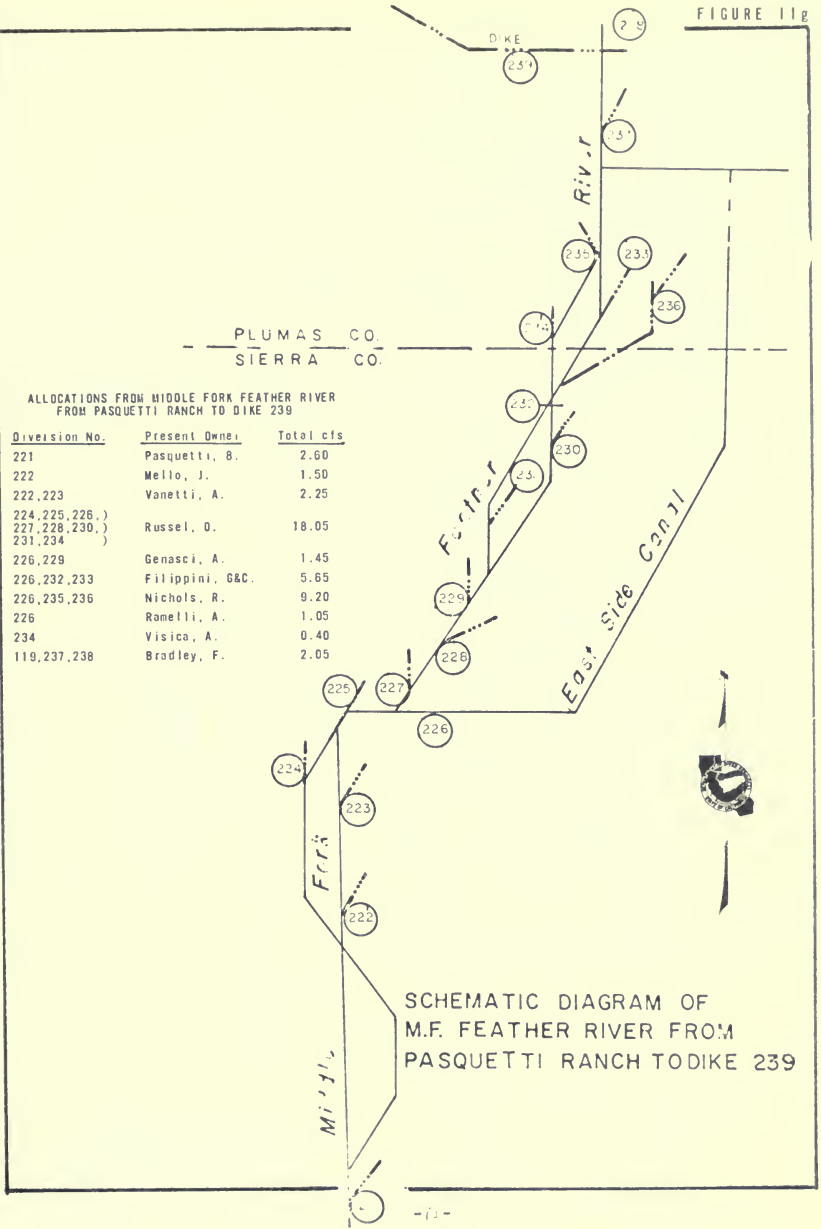
ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER
BETWEEN SIERRAVILLE & PASQUETTI RANCH

Diversion No.	Present Owner	Total cfs
134	Hannon, P.	0.015
134	Snozzi, A.	0.02
135	Carmichael, F.	0.55
137,141,146*,) 147*,149,152)	Webber, G.	13.00
136,137,138,) 139,147*)	Bony, M.	6.85
148	Wilson Bros.	2.00
148,149,150,) 151)	Small, F.	4.90
140,256	Alpers, F.	3.20
142,143,255	Torri, K.	4.00
144,153,154	Mooney, J.	2.00

* See Fig. 11e

SCHEMATIC DIAGRAM OF
MIDDLE FORK FEATHER RIVER
BETWEEN
SIERRAVILLE AND PASQUETTI RANCH

FIGURE 11g

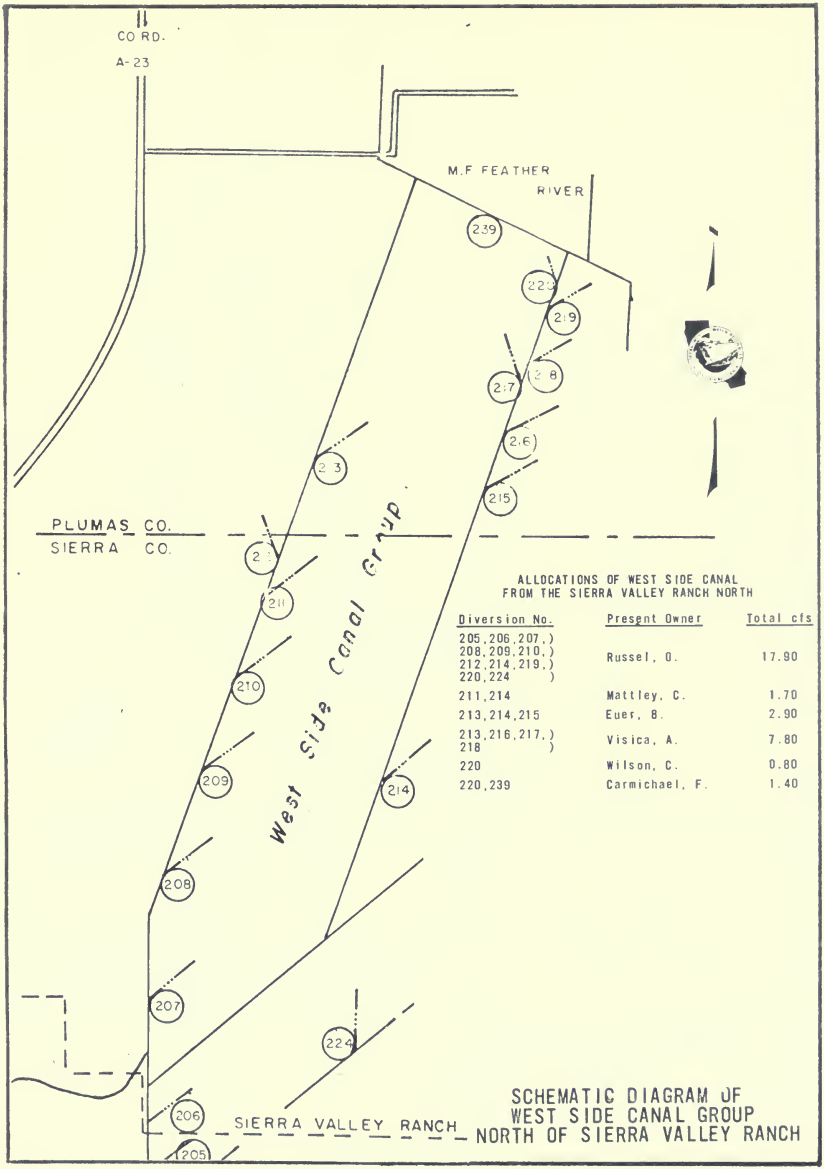


ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER FROM PASQUETTI RANCH TO DIKE 239

Diversion No.	Present Owner	Total cfs
221	Pasquetti, B.	2.60
222	Mello, J.	1.50
222,223	Vanetti, A.	2.25
224,225,226,) 227,228,230,) 231,234)	Russel, O.	18.05
226,229	Genasci, A.	1.45
226,232,233	Filippini, G&C.	5.65
226,235,236	Nichols, R.	9.20
226	Ramelli, A.	1.05
234	Visica, A.	0.40
119,237,238	Bradley, F.	2.05

SCHEMATIC DIAGRAM OF M.F. FEATHER RIVER FROM PASQUETTI RANCH TO DIKE 239

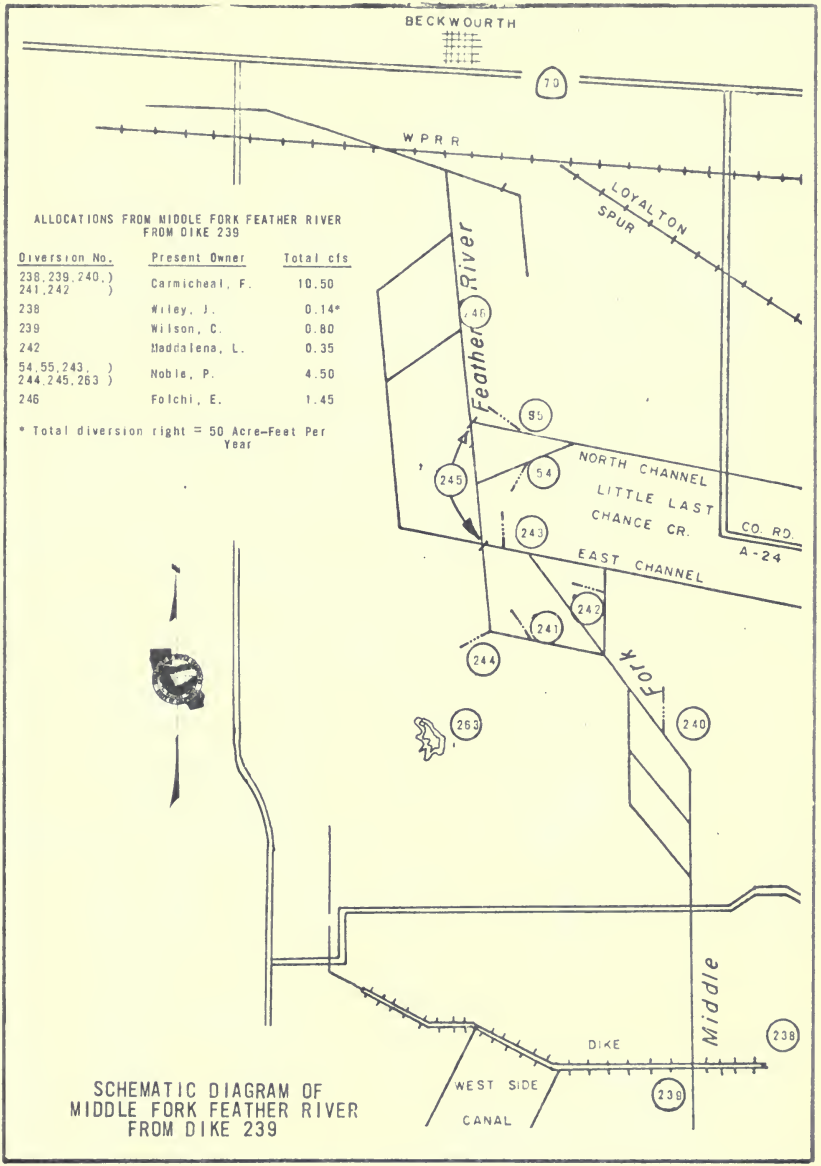
FIGURE 11h



ALLOCATIONS OF WEST SIDE CANAL
FROM THE SIERRA VALLEY RANCH NORTH

Diversion No.	Present Owner	Total cfs
205,206,207,) 208,209,210,) 212,214,219,) 220,224)	Russel, O.	17.90
211,214	Mattley, C.	1.70
213,214,215	Euer, B.	2.90
213,216,217,) 218)	Visica, A.	7.80
220	Wilson, C.	0.80
220,239	Carmichael, F.	1.40

SCHEMATIC DIAGRAM OF
WEST SIDE CANAL GROUP
NORTH OF SIERRA VALLEY RANCH



ALLOCATIONS FROM MIDDLE FORK FEATHER RIVER FROM DIKE 239

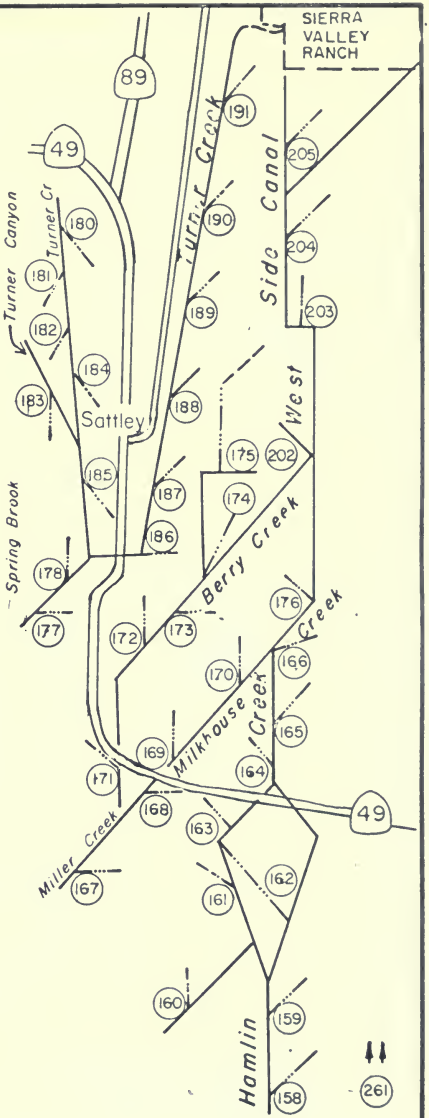
Diversion No.	Present Owner	Total cfs
238,239,240,241,242	Carmicheal, F.	10.50
238	Wiley, J.	0.14*
239	Wilson, C.	0.80
242	Maddalena, L.	0.35
54,55,243,244,245,263	Noble, P.	4.50
246	Folchi, E.	1.45

* Total diversion right = 50 Acre-Feet Per Year

SCHEMATIC DIAGRAM OF MIDDLE FORK FEATHER RIVER FROM DIKE 239

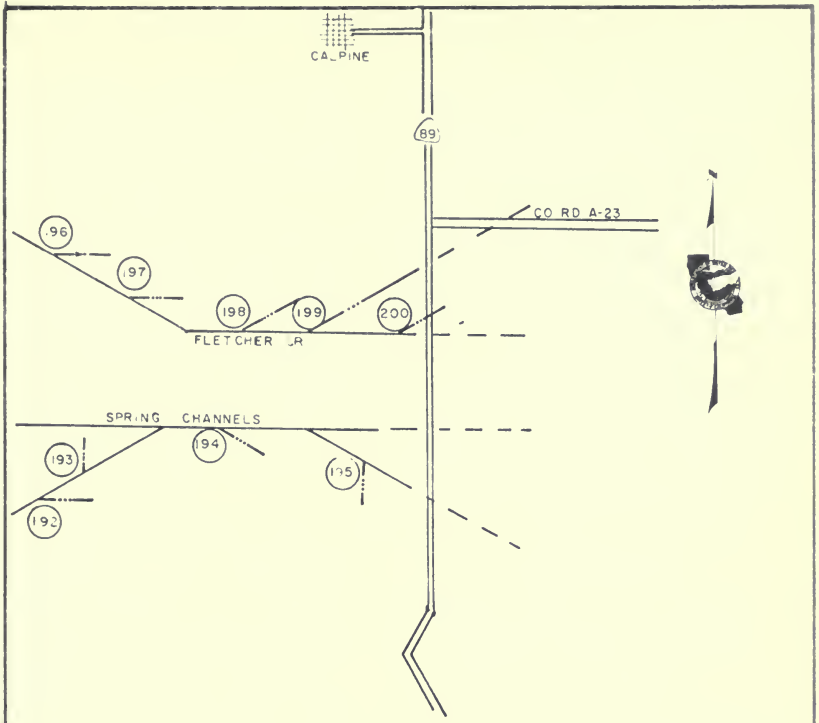
ALLOCATIONS FROM WEST SIDE CANAL GROUP
SOUTH OF SIERRA VALLEY RANCH

Diversion No.	Present Owner	Total cfs
158,159,161,) 162,261)	Maddalena, L.	6.13
167	Strang, A&E.	0.01
160,161,163,) 164,167)	Strang, Estate of	8.54
165,167,168,) 169,170,171,) 173,174,177)	Martinetti, E.	6.33
165,166	Webber, G.	2.60
172,177,178,) 184,185)	Cavitt, J.	4.25
174,202	Openshaw, G.	2.10
175,184,186,) 187)	Church, G.	5.60
160	Turner, J.	0.02
175,181,182,) 183,184,185,) 187,189,190,) 202)	Turner, F.	10.25
176	Wilson Bros.	1.50
180,188	Dargie, T.	2.90
189	Berutti, J.	2.50
189,191,202,) 204,205	Van Vleck, G.	6.05
176,203	Mooney, J.	1.50
176	Pasguetti, B.	2.40



SCHEMATIC DIAGRAM OF
WEST SIDE CANAL GROUP
SOUTH OF SIERRA VALLEY RANCH

FIGURE 11k



ALLOCATIONS FROM FLETCHER CREEK
AND SPRING CHANNELS

Diversion No.	Present Owner	Total cfs
196	Sierra Co. Water District	0.52
198	Blanchard, O.	0.04
177,176,192,) 193,194)	Borelli, A.	1.744
192	Scott, F.	0.05
192,193,194	Jinnette, F&W.	0.046
195,199,200	Paulson & Cadenhead	1.428
199	Lukens & Coppla	0.302
199,200	All Pro Guest Ranch	0.864
199,200	Berutti, J.	0.458

SCHEMATIC DIAGRAM
FLETCHER CREEK
AND
SPRING CHANNELS

North Fork Cottonwood Creek Service Area

The North Fork Cottonwood Creek service area is situated in Shasta County near the town of Ono west of Redding. Figure 12, page 79, shows the North Fork Cottonwood Creek stream system including the diversions and roads.

The source of water supply for this service area is the North Fork of Cottonwood Creek and its two major tributaries, Moon Creek and Jerusalem Creek. The North Fork of Cottonwood Creek flows through the service area in a southeasterly direction to its confluence with the other two major forks of Cottonwood Creek and then to the Sacramento River east of the town of Cottonwood. The service area consists of sparsely scattered parcels separated by steep, brushy hills. These lands are at about the 1,000-foot elevation.

Basis of Service

The water rights on this creek system were determined by court reference and set forth in Decree No. 5479, Shasta County Superior Court, dated June 9, 1920. The North Fork Cottonwood Creek watermaster service area was created September 11, 1929; however, service was provided intermittently in accordance with the decree since 1924. There are 13 water right owners in the area with total allotments of 30.30 cubic feet per second, all with equal priority.

Water Supply

Snowmelt contributes to the flow in the North Fork Cottonwood Creek system during the early part of the irrigation season. However, perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands. In dry years, however, the available supply may be as low as 30 to 40 percent of the decreed allotments.

A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table 19, page 78. This gaging station is downstream from most diversion points on the creek, but gives a general indication of the water supply.

Method of Distribution

The general practice throughout the area is to irrigate by wild flooding. One water user, however, pumps directly from the creek using a sprinkler system to irrigate his crops. Pumping was necessary at this diversion point because the irrigated land was considerably higher in elevation than the creek channel.

1973 Distribution

Watermaster service began July 1 in the North Fork Cottonwood Creek service area and continued until September 30. John A. Nolan, Water Resources Technician II, was the watermaster.

The available water supply in North Fork Cottonwood Creek was very good. Although the streamflow decreased significantly during late July, August, and September, all demands were met.

Special Occurrences

Rainbow Lake remained far below its storage capacity due to the unsafe conditions of Musselback Dam. Curtailment of storage will continue until extensive repairs are made.

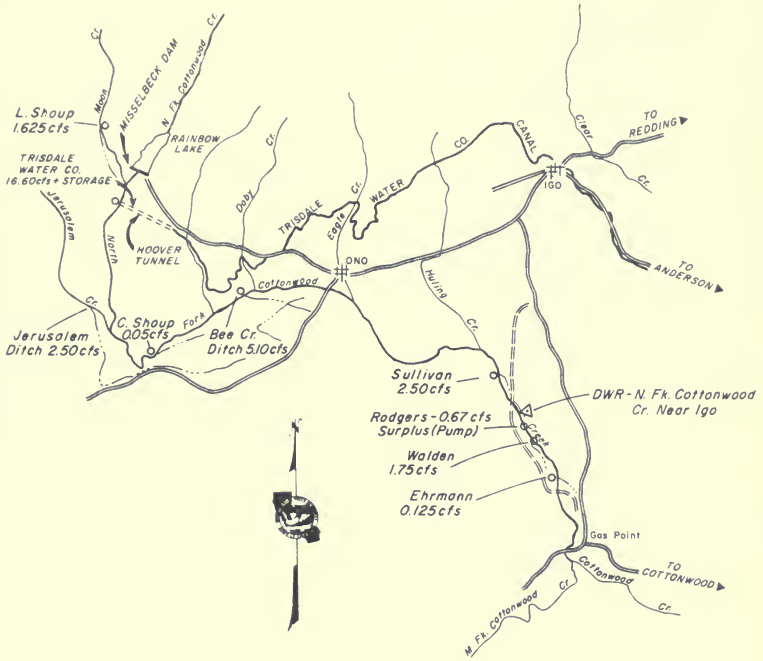
NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 19

NORTH FORK COTTONWOOD CREEK NEAR IGO

Day	March	April	May	June	July	August	September	Day
1	814	400	203	52	21	11	4.2	1
2	714	378	201	48	21	10	4.5	2
3	755	355	198	45	20	10	4.8	3
4	673	341	192	46	19	10	4.8	4
5	600	341	183	41	19	11	4.8	5
6	934	344	180	38	18	11	3.9	6
7	776	344	177	36	17	11	3.0	7
8	786	336	170	33	17	12	3.0	8
9	655	334	165	31	17	12	3.3	9
10	620	327	161	30	16	12	3.0	10
11	577	330	155	30	15	11	4.5	11
12	514	333	145	30	15	11	3.9	12
13	489	341	142	30	14	11	2.8	13
14	468	313	141	33	14	8.9	2.8	14
15	441	299	142	40	14	8.3	3.0	15
16	423	275	138	40	15	7.8	3.3	16
17	407	249	133	39	15	7.8	3.6	17
18	376	236	127	38	15	7.9	4.2	18
19	444	228	122	38	14	7.9	5.8	19
20	782	222	120	36	15	8.7	12	20
21	1010	188	110	34	15	20	8.0	21
22	632	142	60	32	14	20	9.9	22
23	537	139	56	32	14	21	29	23
24	505	133	71	32	13	21	15	24
25	494	132	65	29	13	21	13	25
26	510	135	57	28	12	21	12	26
27	507	148	54	25	12	12	11	27
28	479	172	54	23	11	11	9.9	28
29	449	193	51	21	11	9.2	9.9	29
30	477	190	51	21	11	6.5	9.9	30
31	434		52		11	4.5		31
Mean	590	263	125	34.4	15.1	11.9	7.1	Mean
Runoff In Acre-Feet	36260	15670	7688	2045	928	729	422	Runoff In Acre-Feet



△ Permanent Recorder Station

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
NORTH FORK COTTONWOOD CREEK
WATERMASTER SERVICE AREA

North Fork Pit River Watermaster Service Area

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends southward from the Oregon border about 43 miles to just south of Alturas.

Eight small independent streams draining the west slope of the Warner Mountains and generally following a westerly direction comprise the major source of water supply. Three of these streams, New Pine, Cottonwood, and Davis Creeks, are tributary to Goose Lake. The other 5 are tributary to the North Fork Pit River. From north to south these are: Linville, Franklin, Joseph, Thoms, and Parker Creeks.

The North Fork Pit River flows in a southerly direction from the south rim of Goose Lake Basin to its confluence with the South Fork Pit River immediately below Alturas. The basins of Goose Lake and the North Fork Pit River may be considered as completely separate, since the lake has not spilled into the river for nearly 100 years.

The place of use in the northern half of the area lies in a relatively long, narrow, sloping strip extending between the east shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams. The elevation of the places of use range from about 4,350 feet just below Alturas to about 5,200 feet at the upper portions on some of the creeks.

Maps of the North Fork Pit River watermaster service area and of the separate stream systems within the area are presented as Figures 13 through 13j, pages 91 through 101.

Basis of Service

There are 91 water rights covering 11 [illegible] service area with allowable [illegible] 21h.55 cubic feet per second. Table 20, page 82, briefly outlines the five decrees covering the area and presents data relative to establishment of watermaster service and water rights.

Water Supply

The water supply is derived primarily from snowmelt for all streams in the North Fork Pit River service area except Linville Creek, which, having a relatively small drainage area, is almost entirely spring fed. After mid-June, the rest of the streams also depend on springs, but diminish rapidly until mid-July, after which the flow remains fairly constant. There are several small reservoirs in the area, but they are used essentially as regulatory storage.

Method of Distribution

Distribution is accomplished by diversion structures in the main channels diverting into ditches which convey the water to its place of use. Wild flooding from small feeder ditches is the common method of application. There is, however, increasing use of sprinkler systems, some directly from ditches with supplemental ground water being added as the surface flow diminishes. Subirrigation by the use of large flashboard dams to raise the water level in the channel is practiced along the North Fork Pit River between Parker Creek and Alturas.

1973 Distribution

Watermaster service in the North Fork Pit River service area was begun on April 16 and continued through September 30, 1973. Charles H. Holmes, Assistant Engineer, Water Resources, was the watermaster.

TABLE 20

DECREES AND RELATED DATA - NORTH FORK PIT RIVER SERVICE AREA

Stream	Modoc County Superior Court Decree No.	Date	Type[a]	Service Area Created	No. of Water Right Owners	Total Cubic Feet Per Second	Remarks
New Pine Creek	2821	6-14-32	CR	6-22-32	21	22.18	Decree does not define town users rights, but by agreement they may divert from 7 a.m. Monday until 7 a.m. Tuesday, further modified to a continuous flow used in rotation.
Cottonwood Creek	2344	5-03-40	CR	12-13-40	5	15.35	When water for Diversion No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4.
Davis Creek	2782	6-30-32	CR	7-13-32	19	52.70	4 priorities, 4-1 to 9-15. Some rights vary according to flow available. Most 1st & 2nd priorities are year-round. One second priority right is for 0.40 cfs export for Roberts Creek.
					2[b]		Appropriative Permit 9825 allows diversion from North Fork Davis Creek and License 10549 to divert from Davis Creek, both for the period from 10-1 to 5-1.
Franklin Creek	3118	9-08-33	CR	9-14-33	4	11.66	4 priorities. The 1st priority and all 2nd priority rights are year-round, except one, which is equal to all the others (1.46 cfs), and is for the period 9-15 to 3-31 annually. Third and fourth priorities are for 4-1 to 9-30 each year.
North Fork Pit River	4074	12-14-34	S	12-18-39	10	51.73	5 priorities, 4-1 to 9-30. Dorris Reservoir water diverted through Parker Creek ditch on Parker Creek. 4th and 5th priorities are special class.
Linville	4074	12-14-39	S	12-18-39	3	8.30	2 priorities.
Joseph	4074	12-14-39	S	12-18-39	6	11.98	4 priorities, 4-1 to 9-30. Diversions on south side of stream, with the exception of No. 26, are on net consumptive use basis.
Parker	4074	12-14-39	S	12-18-39	7	18.07	4 priorities, 4-1 to 9-30. Diversion to Dorris Reservoir shown on North Fork Pit River schedule is made at No. 120, Parker Creek ditch.
Shields	4074	12-14-39	S	12-18-39	5	7.50	4 priorities, 4-1 to 9-30.
Thoms	4074	12-14-39	S	12-18-39	9	6.44 9.40	3 priorities, 4-1 to 9-30. (5.0 cfs export to Cedar Cr. (4.40 cfs export to Stony (Canyon.
Gleason	4074	12-14-39	S	12-18-39	4	4.45	5 priorities.

a S-Statutory, CR-Court Reference,

b Appropriative rights, junior to the decreed rights.

The available water supply during the early spring was good, but in May the flow diminished rapidly and continued to decrease until late in September when the first measurable rain fell.

New Pine Creek. Surplus water was available to New Pine Creek water right owners from April 27 to June 11, which includes the period that the proration or correlative system of distribution was in effect (until June 30). Beginning July 1, in accordance with provisions of the decree, distribution was based on the priority system (four priorities). On July 1, 83 percent of third priority was available. The flow continued to diminish until July 27, when only first and second priorities were being filled. Further decrease continued until August 12 when about half of second priority was supplied. This condition prevailed the rest of the season.

Cottonwood Creek. The flow in Cottonwood Creek was at no time sufficient to supply any sixth priority and the full fifth priority was supplied only on May 9. Thereafter, the flow decreased gradually, eliminating all but first priority on June 27. By the end of the season the flow had decreased to only 5 percent of first priority allotments.

Davis Creek. Due to construction of new diversion structures on Davis Creek, the recorder was not installed until May 9, at which time 32 percent of third priority was available. The flow increased from this date until May 21, reaching a maximum of 74 percent of the third priority and holding this flow until May 27. The flow then gradually decreased until September 1, when the flow was down to 86 percent of the second priority. It remained at this level until the end of the season.

Construction of several new structures, combining certain old ones on Davis Creek, was accomplished during the year. By agreement between several users, some are no longer diverting at the points specified in the decree. This combining results in more efficient use of water and in easier operation by the watermaster (see "Special Occurrences", page 84, for details).

Linville Creek. The available water supply in Linville Creek on April 27 was 67 percent of first priority, gradually increasing until May 16, reaching 87 percent of first priority where it remained until June 5, then gradually decreasing to 67 percent of first priority by the end of the season.

Franklin Creek. The available water supply in Franklin Creek was sufficient to satisfy all allotments from April 26 to May 25. All third priority rights were served until June 25. The flow then gradually decreased until mid-September when only 8 percent of third priority allotments were being served. On September 15 the winter schedule of priorities became effective. Under this schedule, only 73 percent of the second priority allotments were met.

Joseph Creek. A surplus water supply existed in Joseph Creek from April 16, when the recorder was installed, until May 31. The flow then decreased until July 18, when only first priority allotments were served. Thereafter, the flow decreased to 74 percent of first priority at the end of the season.

Thoms Creek. A sufficient water supply existed in Thoms Creek to meet all allotments until July 19. The flow then gradually decreased until August 11 at which time only first priority rights were satisfied. The flow gradually increased after August 25 to the end of the season, when 28 percent of third priority water was available.

North Fork Pit River. Surplus water existed in the North Fork Pit River until June 11. On that date the diversion to Dorris Reservoir was reduced. The flow continued to decrease rapidly until June 20 when first and second priority allotments only were being served. The

decrease continued until August 20 when only first priority was available. This condition existed throughout the remainder of the season.

Parker Creek and Tributaries. The flow in Parker Creek was serving all four priorities on June 1. By the end of June the supply was down to 25 percent of third priorities. The recession continued until only first priorities were served on September 5, and then remained at this rate for the remainder of the season.

The available water supply in Gleason Creek was only sufficient to satisfy first priority allotments until April 22. The flow then rapidly dropped and the creek was completely dry by June 4.

On June 1 there was sufficient water in Shields Creek to satisfy all four priorities. By June 15 the flow had receded to only enough for the first and second allotments. The stream stabilized around 5 cubic feet per second for the remainder of the season. This small spring-fed stream has a very dependable supply.

Special Occurrences

Several new structures, replacing older ones, were built during the year on Davis Creek. The major change was at Diversion 4. A new concrete structure, with facilities for measurement and control, was built to serve formerly separate Diversions 4, 5, 6, 7, 8, 9, and 10. Diversions 4, 7, 8, and 10, to the south (left), are now served by No. 4, with turnouts as needed and agreed by the users. Diversion 5, Sherlock Ditch, to the north, now using the same diversion as No. 4, diverts water for Nos. 5, 6, and 9.

A new and larger structure for Diversion 1, on the North Fork, was built to divert water to the north for storage. This is planned, not only for the existing Briles Reservoir, but also for a proposed larger reservoir there and new reservoir in the Fender Flat area.

A division box structure was built at the division of the north branch and south branch of Davis Creek, which is located above Diversion 12.

The above diversion changes were a community effort with federal aid. The increased storage and pertinent water rights will belong to the recently formed Davis Creek Water Conservation District. This project, when accomplished, will owe its existence largely to the support provided by the North Cal-Neva Resource Conservation and Development Project.

Another new structure was built at one point where Davis Creek enters the Ron Echard property. This structure now diverts water formerly diverted at Nos. 12, 13, 16, 27, 30, 31, and 31a.

Parshall flumes were constructed on the Graveyard and Sherlock Ditches.

Three diversion structures were also installed on Franklin Creek for more efficient distribution of the flows.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 21

NEW PINE CREEK BELOW SCHROEDER'S

Day	March	April	May	June	July	August	September	Day
1			22	31	11	5.9	5.2	1
2			21	31	11	5.7	5.2	2
3			22	30	10	5.7	5.2	3
4			22	29	10	5.7	5.2	4
5			22	27	10	5.7	5.2	5
6			21	26	9.8	5.7	5.3	6
7			22	26	8.3	5.7	5.3	7
8			24	25	9.3	5.7	5.3	8
9			28	24	9.0	5.5	5.3	9
10			25	23	8.7	5.5	5.3	10
11			26	22	8.7	5.5	5.3	11
12			30	20	8.4	5.3	5.3	12
13			36	19	8.4	5.2	5.3	13
14			42	18	8.0	5.2	5.3	14
15			43	18	8.0	5.2	5.3	15
16		9.8*	46	17	7.7	5.2	5.3	16
17		10	48	17	7.7	5.2	5.3	17
18		9.3	48	17	7.5	5.2	5.3	18
19		8.7	50	17	7.4	5.2	5.7	19
20		8.0	57	16	7.4	5.2	6.2	20
21		8.0	39	16	7.4	5.2	6.5	21
22		8.7	36	16	7.4	5.2	5.9	22
23		9.3	36	15	7.4	5.3	5.7	23
24		10	41	15	7.2	5.3	6.2	24
25		11	41	14	7.2	5.3	5.7	25
26		17	36	14	7.0	5.2	5.5	26
27		24	35	13	6.7	5.2	5.3	27
28		28	35	13	6.5	5.2	5.3	28
29		27	35	12	6.5	5.2	5.3	29
30		23	33	12	6.5	5.2	5.3	30
31			33		6.2	5.2		31
Mean		14.1	34.0	19.8	8.2	5.4	5.4	Mean
Runoff In Acre-Feet		420	2090	1180	502	331	324	Runoff In Acre-Feet

* Beginning of Record

TABLE 22

COTTONWOOD CREEK BELOW LARKIN GARDEN DITCH

Day	March	April	May	June	July	August	September	Day
1			6.9	2.7	2.0	0.3	0.2	1
2			5.7	3.3	1.8	0.3	0.2	2
3			6.3	3.3	1.7	0.3	0.2	3
4			7.6	3.5	1.7	0.3	0.2	4
5			5.7	3.5	1.6	0.3	0.1	5
6			4.4	3.8	1.5	0.3	0.1	6
7			6.3	3.8	1.5	0.3	0.1	7
8			11	3.8	1.4	0.3	0.1	8
9			14	4.6	1.3	0.3	0.1	9
10			11	4.6	1.3	0.3	0.1	10
11			11	4.8	1.2	0.3	0.1	11
12			11	5.6	1.1	0.3	0.1	12
13			12	5.6	0.9	0.3	0.1	13
14			11	5.8	0.8	0.3	0.1	14
15			10	5.7	0.8	0.3	0.1	15
16			10	5.7	0.8	0.3	0.1	16
17			11	5.8	0.8	0.3	0.1	17
18			11	5.6	0.7	0.3	0.2	18
19			11	4.8	0.7	0.3	0.2	19
20			10	4.8	0.8	0.2	0.2	20
21			8.8	4.8	0.8	0.2	0.3	21
22			6.3	3.8	0.8	0.2	0.3	22
23			5.8	3.8	0.8	0.2	0.5	23
24			8.3	3.8	0.7	0.2	0.6	24
25			8.3	3.5	0.6	0.2	0.5	25
26		10*	4.4	3.5	0.5	0.2	0.3	26
27		10	3.2	3.5	0.5	0.2	0.2	27
28		10	2.5	3.2	0.4	0.2	0.2	28
29		8.8	2.0	2.6	0.4	0.2	0.2	29
30		8.8	2.0	2.2	0.3	0.2	0.2	30
31			2.3		0.3	0.2		31
Mean		9.5	7.6	4.2	1.0	0.3	0.2	Mean
Runoff In Acre-Feet		94	470	248	60	18	12	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 23

DAVIS CREEK AT OLD FISH WHEEL

Day	March	April	May	June	July	August	September	Day
1				22	8.6	5.6	5.0	1
2				22	8.4	5.3	4.7	2
3				22	8.0	5.3	4.7	3
4				22	7.9	5.0	4.7	4
5				20	7.7	5.0	4.4	5
6				20	7.0	5.0	4.4	6
7				18	6.5	5.3	4.4	7
8				16	6.5	5.0	4.4	8
9			21*	16	6.5	5.0	4.4	9
10			22	16	6.5	5.0	4.4	10
11			22	15	6.4	5.0	4.4	11
12			23	15	6.4	5.0	4.4	12
13			23	15	6.3	5.0	4.4	13
14			24	15	6.3	5.0	4.4	14
15			24	14	6.3	5.0	4.4	15
16			25	13	6.2	5.0	4.4	16
17			26	13	6.2	5.0	4.4	17
18			26	13	6.2	5.0	4.4	18
19			26	12	6.2	5.0	5.0	19
20			26	12	6.1	5.0	5.0	20
21			27	12	6.1	5.0	4.7	21
22			27	11	6.1	5.0	4.6	22
23			27	11	6.1	5.0	5.0	23
24			27	10	6.1	5.0	5.3	24
25			27	10	6.1	5.0	4.7	25
26			27	10	6.0	5.0	4.6	26
27			27	9.7	6.0	5.0	4.6	27
28			26	9.4	6.0	5.0	4.6	28
29			25	9.0	5.9	5.0	4.6	29
30			24	8.7	5.9	5.0	4.6	30
31			23		5.9	5.0		31
Mean			25.0	14.4	6.5	5.0	4.6	Mean
Runoff In Acre-Feet			1140	856	401	310	274	Runoff In Acre-Feet

* Beginning of Record

TABLE 24

LINVILLE CREEK AT OLD POWER HOUSE

Day	March	April	May	June	July	August	September	Day
1			3.1	3.4	3.1	2.9	2.8	1
2			3.1	3.4	3.1	2.9	2.8	2
3			3.1	3.4	3.1	2.9	2.8	3
4			3.1	3.4	3.1	2.9	2.8	4
5			3.1	3.4	3.1	2.9	2.8	5
6			3.1	3.2	3.1	2.9	2.8	6
7			3.1	3.2	3.1	2.9	2.8	7
8			3.2	3.2	3.1	2.9	2.8	8
9			3.2	3.2	3.1	2.9	2.8	9
10			3.2	3.1	3.1	2.9	2.8	10
11			3.2	3.1	3.1	2.8	2.8	11
12			3.2	3.1	3.1	2.8	2.8	12
13			3.2	3.1	3.1	2.8	2.6	13
14			3.2	3.1	3.1	2.8	2.6	14
15			3.2	3.1	3.1	2.8	2.6	15
16			3.4	3.1	2.9	2.8	2.6	16
17			3.4	3.1	2.9	2.8	2.6	17
18			3.4	3.1	2.9	2.8	2.6	18
19			3.4	3.1	2.9	2.8	2.6	19
20			3.4	3.1	2.9	2.8	2.6	20
21			3.4	3.1	2.9	2.8	2.6	21
22			3.4	3.1	2.9	2.8	2.6	22
23			3.4	3.1	2.9	2.8	2.6	23
24			3.4	3.1	2.9	2.8	2.6	24
25			3.4	3.1	2.9	2.8	2.6	25
26			3.4	3.1	2.9	2.8	3.2	26
27		3.1*	3.4	3.1	2.9	2.8	3.1	27
28		3.1	3.4	3.1	2.9	2.8	3.1	28
29		3.1	3.4	3.1	2.9	2.8	3.1	29
30		3.1	3.4	3.1	2.9	2.8	3.1	30
31			3.4		2.9	2.8		31
Mean		3.1	3.3	3.2	3.0	2.8	2.8	Mean
Runoff In Acre-Feet		25	202	188	184	174	165	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 25

FRANKLIN CREEK ABOVE DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1			11	6.6	3.4	2.4	2.3	1
2			11	6.3	3.2	2.4	2.3	2
3			11	6.0	3.2	2.4	2.2	3
4		4.5*	11	5.9	3.1	2.4	2.2	4
5		4.6	11	5.6	2.9	2.3	2.2	5
6		4.6	11	5.1	2.8	2.3	2.3	6
7		4.7	11	4.9	2.7	2.3	2.3	7
8		5.0	12	4.7	2.7	2.3	2.3	8
9		5.1	13	4.7	2.7	2.3	2.3	9
10		5.1	13	4.6	2.7	2.3	2.2	10
11		5.3	13	4.6	2.6	2.3	2.2	11
12		5.3	13	4.6	2.6	2.3	2.2	12
13		5.4	15	4.6	2.6	2.2	2.3	13
14		5.9	15	4.5	2.5	2.2	2.3	14
15		6.2	14	4.3	2.5	2.2	2.3	15
16		6.5	14	4.2	2.5	2.2	2.3	16
17		6.9	13	4.2	2.5	2.2	2.3	17
18		7.2	13	4.1	2.5	2.2	2.3	18
19		7.7	12	3.9	2.5	2.2	2.5	19
20		8.3	12	3.7	2.5	2.2	2.8	20
21		8.5	11	3.4	2.5	2.1	2.6	21
22		9.3	11	3.4	2.4	2.1	2.3	22
23		9.5	11	3.4	2.4	2.2	2.5	23
24		9.7	11	3.4	2.4	2.2	2.5	24
25		9.7	11	3.4	2.4	2.2	2.4	25
26		11	9.8	3.4	2.4	2.2	2.3	26
27		12	9.7	3.4	2.4	2.2	2.3	27
28		12	9.3	3.4	2.4	2.2	2.3	28
29		12	8.2	3.4	2.4	2.3	2.3	29
30		11	7.2	3.4	2.4	2.4	2.3	30
31			6.8		2.4	2.3		31
Mean		7.5	11.4	4.4	2.6	2.3	2.3	Mean
Runoff In Acre-Feet		403	704	260	161	139	138	Runoff In Acre-Feet

* Beginning of Record

TABLE 26

JOSEPH CREEK BELOW COUCH CREEK

Day	March	April	May	June	July	August	September	Day
1			9.1	8.0	2.9	1.7	1.7	1
2			9.1	7.6	2.9	1.8	1.7	2
3			9.1	7.5	2.8	1.8	1.7	3
4			9.3	6.8	2.8	1.8	1.7	4
5			12	6.7	2.8	1.8	1.6	5
6			9.5	6.6	2.7	1.7	1.7	6
7			9.1	6.8	2.7	1.7	1.7	7
8			9.0	6.4	2.7	1.7	1.7	8
9			9.0	6.2	2.7	1.7	1.7	9
10			9.0	6.1	2.7	1.7	1.7	10
11			9.0	6.0	2.6	1.7	1.7	11
12			9.1	6.0	2.8	1.7	1.7	12
13			9.1	6.0	2.5	1.7	1.7	13
14			9.5	5.8	2.4	1.7	1.7	14
15			9.5	5.9	2.4	1.7	1.7	15
16		19*	9.5	5.7	2.4	1.6	1.7	16
17		15	10	5.5	2.4	1.6	1.7	17
18		12	11	5.4	2.4	1.6	1.7	18
18		11	11	5.3	2.0	1.6	1.9	19
20		9.7	9.5	4.9	2.0	1.7	1.9	20
21		12	9.1	4.3	2.0	1.7	1.8	21
22		14	9.1	4.1	2.0	1.7	1.7	22
23		12	9.0	4.1	2.0	1.7	1.7	23
24		11	9.1	4.1	1.9	1.7	1.7	24
25		11	9.1	4.1	1.8	1.7	1.7	25
26		12	9.0	3.8	1.7	1.7	1.7	26
27		12	9.0	3.2	1.7	1.7	1.7	27
28		12	8.9	3.1	1.7	1.7	1.7	28
29		10	8.8	3.0	1.7	1.7	1.7	29
30		9.2	8.9	3.0	1.7	1.7	1.7	30
31			8.8		1.7	1.7		31
Mean		12	9.4	5.4	2.3	1.7	1.7	Mean
Runoff In Acre-Feet		381	578	321	141	105	102	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 27

NORTH FORK PIT RIVER BELOW THOMS CREEK

Day	March	April	May	June	July	August	September	Day
1			53	27	4.2	3.6	3.4	1
2			51	23	4.0	3.6	3.4	2
3			61	21	4.0	3.6	3.4	3
4		150*	75	20	3.8	3.6	3.4	4
5		149	78	17	3.8	3.6	3.4	5
6		146	73	15	3.8	3.6	3.4	6
7		140	64	13	3.8	3.6	3.4	7
8		140	62	13	3.8	3.6	3.4	8
9		141	60	13	3.6	3.6	3.4	9
10		145	58	12	3.6	3.6	3.4	10
11		154	58	12	3.6	3.6	3.4	11
12		135	60	12	3.6	3.6	3.4	12
13		125	63	13	3.6	3.6	3.4	13
14		99	65	19	3.6	3.6	3.4	14
15		88	64	18	3.6	3.6	3.4	15
16		86	63	18	3.6	3.6	3.4	16
17		94	63	17	3.6	3.6	3.4	17
18		79	61	17	3.6	3.6	3.4	18
19		74	59	12	3.6	3.6	3.4	19
20		74	56	11	3.6	3.6	3.4	20
21		65	50	7.8	3.6	3.6	3.4	21
22		62	48	7.0	3.6	3.6	3.4	22
23		59	44	6.2	3.6	3.6	3.4	23
24		56	42	7.0	3.6	3.6	3.4	24
25		57	67	7.0	3.6	3.6	5.0	25
26		57	41	6.2	3.6	3.6	4.6	26
27		65	36	5.0	3.6	3.6	3.6	27
28		68	32	4.6	3.6	3.6	3.6	28
29		64	30	4.2	3.6	3.4	3.6	29
30		59	30	4.2	3.6	3.4	3.6	30
31			30		3.6	3.4		31
Mean		97.4	54.7	13	3.7	3.6	3.5	Mean
Runoff In Acre-Feet		5220	3370	758	226	220	209	Runoff In Acre-Feet

* Beginning of Record

TABLE 28

THOMS CREEK AT CEDARVILLE-ALTURAS HIGHWAY

Day	March	April	May	June	July	August	September	Day
1			29	8.1	0.9	0.1	0.2	1
2			28	7.7	0.8	0.1	0.2	2
3			29	7.5	0.8	0.1	0.2	3
4		4.9*	28	6.7	0.8	0.1	0.2	4
5		7.8	27	6.5	0.7	0.1	0.1	5
6		8.8	26	6.5	0.7	0.1	0.1	6
7		11	26	5.9	0.7	0.1	0.1	7
8		12	28	5.9	0.6	0.1	0.2	8
9		14	29	5.9	0.6	0.1	0.2	9
10		17	27	5.7	0.5	0.1	0.2	10
11		25	30	5.5	0.5	0.1	0.2	11
12		30	32	5.3	0.4	0.0	0.2	12
13		32	31	5.1	0.4	0.0	0.2	13
14		35	28	5.1	0.4	0.0	0.3	14
15		35	28	4.9	0.4	0.0	0.3	15
16		32	27	4.9	0.3	0.0	0.3	16
17		35	26	4.9	0.3	0.0	0.3	17
18		36	25	4.7	0.3	0.0	0.3	18
19		30	22	4.6	0.2	0.0	0.4	19
20		26	20	4.3	0.1	0.0	0.4	20
21		23	18	3.2	0.1	0.0	0.4	21
22		23	17	2.7	0.1	0.0	0.5	22
23		27	16	2.2	0.1	0.0	0.5	23
24		30	17	2.4	0.1	0.0	0.5	24
25		35	17	2.4	0.1	0.1	0.5	25
26		39	13	2.0	0.1	0.1	0.5	26
27		45	11	1.9	0.1	0.1	0.6	27
28		45	10	1.4	0.1	0.2	0.6	28
29		38	9.6	1.0	0.1	0.2	0.6	29
30		32	9.3	0.9	0.1	0.2	0.6	30
31			9.5		0.1	0.2		31
Mean		27	22	4.5	0.4	0.1	0.3	Mean
Runoff In Acre-Feet		1440	1380	269	23	4.4	20	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discherge in Cubic Feet Per Second

TABLE 29

PARKER CREEK AT FOGARTY RANCH

Day	March	April	May	June	July	August	September	Day
1				17E*	8.1	3.3	2.7	1
2				17E	6.7	3.3	2.7	2
3				16E	7.1	3.4	2.7	3
4				16E	6.7	3.0	2.7	4
5				16E	5.2	3.0	2.4	5
6				15E	5.0	2.6	2.4	6
7				15E	5.0	2.3	2.3	7
8				15E	5.0	2.2	2.3	8
9				14E	4.6	2.3	2.6	9
10				14E	4.6	2.8	2.6	10
11				14E	5.2	2.7	2.6	11
12				13E	5.0	2.6	2.6	12
13				13	5.0	2.3	2.4	13
14				13	4.1	2.6	2.3	14
15				13	3.3	2.4	2.3	15
16				12	3.3	2.3	2.0	16
17				13	4.1	2.3	1.2	17
18				12	5.2	2.3	1.2	18
19				10	4.1	2.2	1.4	19
20				8.1	3.2	2.2	2.8	20
21				7.1	3.3	2.4	3.1	21
22				7.1	3.4	2.4	2.7	22
23				6.7	3.3	2.4	3.1	23
24				6.7	3.1	2.7	4.1	24
25				5.2	3.1	3.0	4.1	25
26				5.0	2.8	3.0	2.3	26
27				5.0	3.0	3.1	2.3	27
28				9.1	2.8	2.6	2.7	28
29				8.1	2.7	2.4	3.0	29
30				8.1	2.7	2.4	3.1	30
31					2.8	2.6		31
Mean				11.5	4.3	2.6	2.6	Mean
Runoff In Acre-Feet				683	265	160	152	Runoff In Acre-Feet

* Beginning of Record
E Estimated

TABLE 30

SHIELDS CREEK BELOW PEPPERDINE RANCH

Day	March	April	May	June	July	August	September	Day
1				3.9*	3.6	2.4	1.8	1
2				3.6	3.6	2.4	1.8	2
3				3.7	3.3	2.2	1.8	3
4				3.7	3.3	2.1	1.6	4
5				3.0	3.6	2.0	1.4	5
8				2.4	3.6	2.0	1.5	6
7				2.5	3.6	2.0	1.5	7
8				3.3	3.6	2.0	1.5	8
9				3.2	3.6	2.0	1.5	9
10				3.1	3.4	2.0	1.5	10
11				3.1	2.5	2.0	1.5	11
12				3.2	3.0	2.0	1.6	12
13				3.6	2.8	1.9	1.5	13
14				3.6	2.8	1.8	1.4	14
15				3.7	2.8	1.5	1.4	15
16				3.7	2.8	1.8	1.4	16
17				3.8	2.8	1.8	1.4	17
18				3.6	2.7	1.8	1.4	18
19				3.8	2.6	1.8	1.5	19
20				3.7	2.5	1.9	2.3	20
21				3.7	2.5	1.9	1.7	21
22				3.7	2.3	1.9	1.2	22
23				3.7	2.2	2.0	1.8	23
24				3.8	2.2	2.0	1.9	24
25				3.6	2.1	2.0	2.0	25
26				3.2	2.1	2.0	1.4	26
27				3.1	2.1	2.0	1.3	27
28				3.0	2.1	2.0	1.7	28
29				2.7	2.1	1.9	1.4	29
30				2.8	2.4	1.9	1.4	30
31					2.4	1.8		31
Mean				3.4	2.8	2.0	1.6	Mean
Runoff In Acre-Feet				200	173	121	93	Runoff In Acre-Feet

* Beginning of Record

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 31

PARKER CREEK ABOVE HIGHWAY 395 NEAR ALTURAS

Day	March	April	May	June	July	August	September	Day
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15			NO RECORD AVAILABLE FOR 1973 SEASON					15
16								16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
Mean Runoff In Acre-Feet								Mean Runoff In Acre-Feet

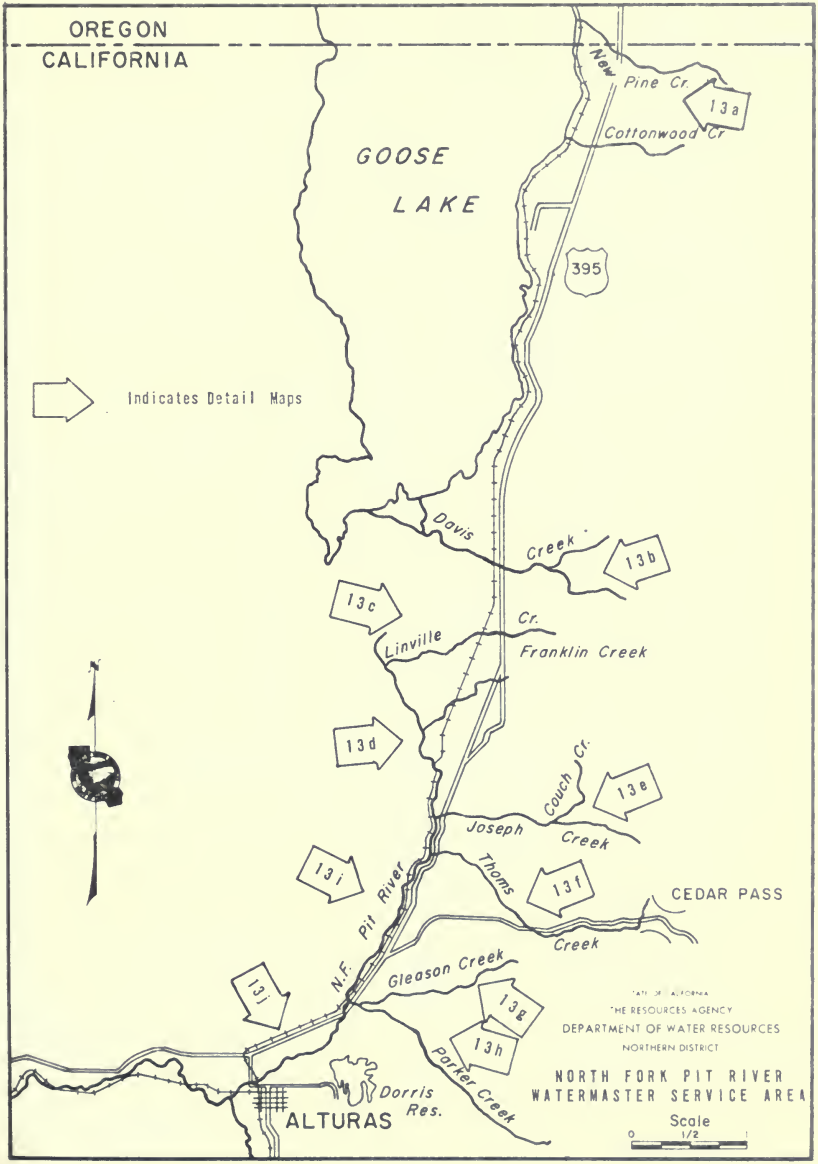
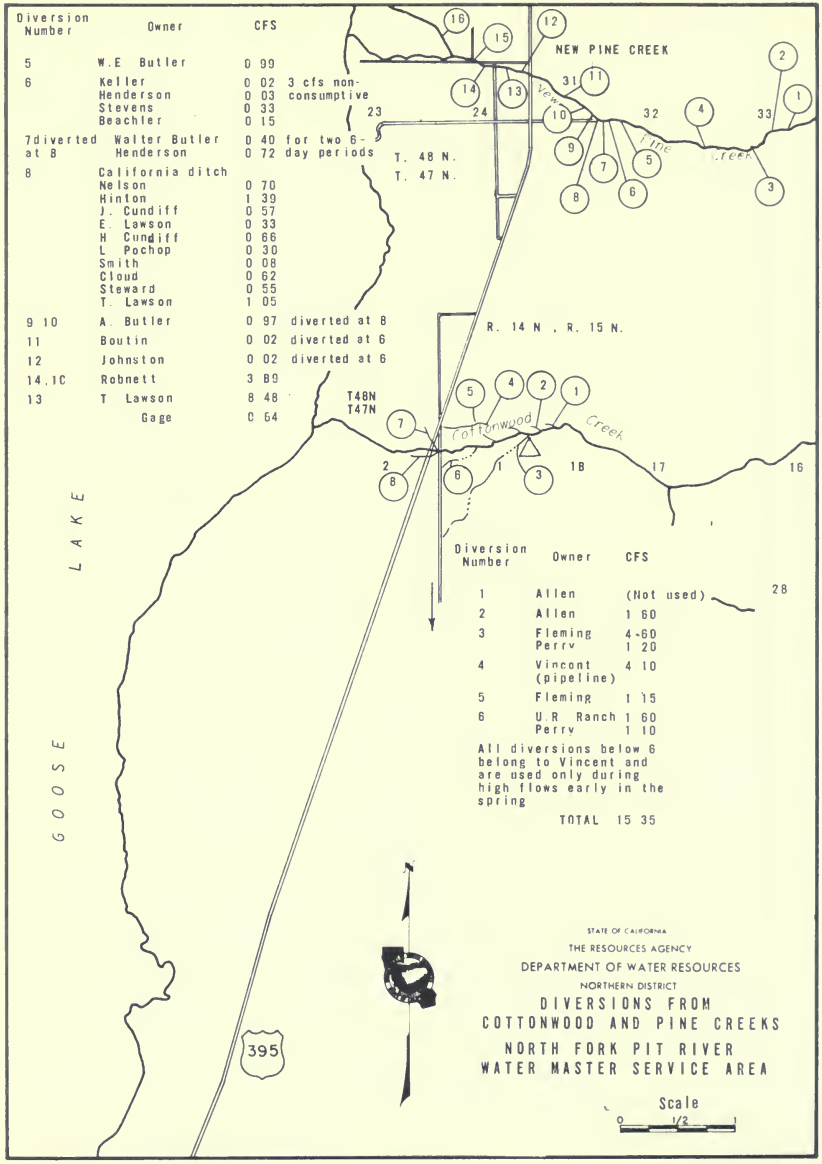

OREGON
CALIFORNIA
GOOSE
LAKE
New Pine Cr.
13a
Cottonwood Cr
395
Indicates Detail Maps
Davis Creek
13b
13c
Linville Cr.
Franklin Creek
13d
Couch Cr.
13e
Joseph Creek
13i
Pit River
Thams Creek
13f
CEDAR PASS
N.F.
Gleason Creek
13j
13g
13h
Parker Creek
Dorris Res.
ALTURAS
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA
Scale
0
1/2
1

Figure 13a

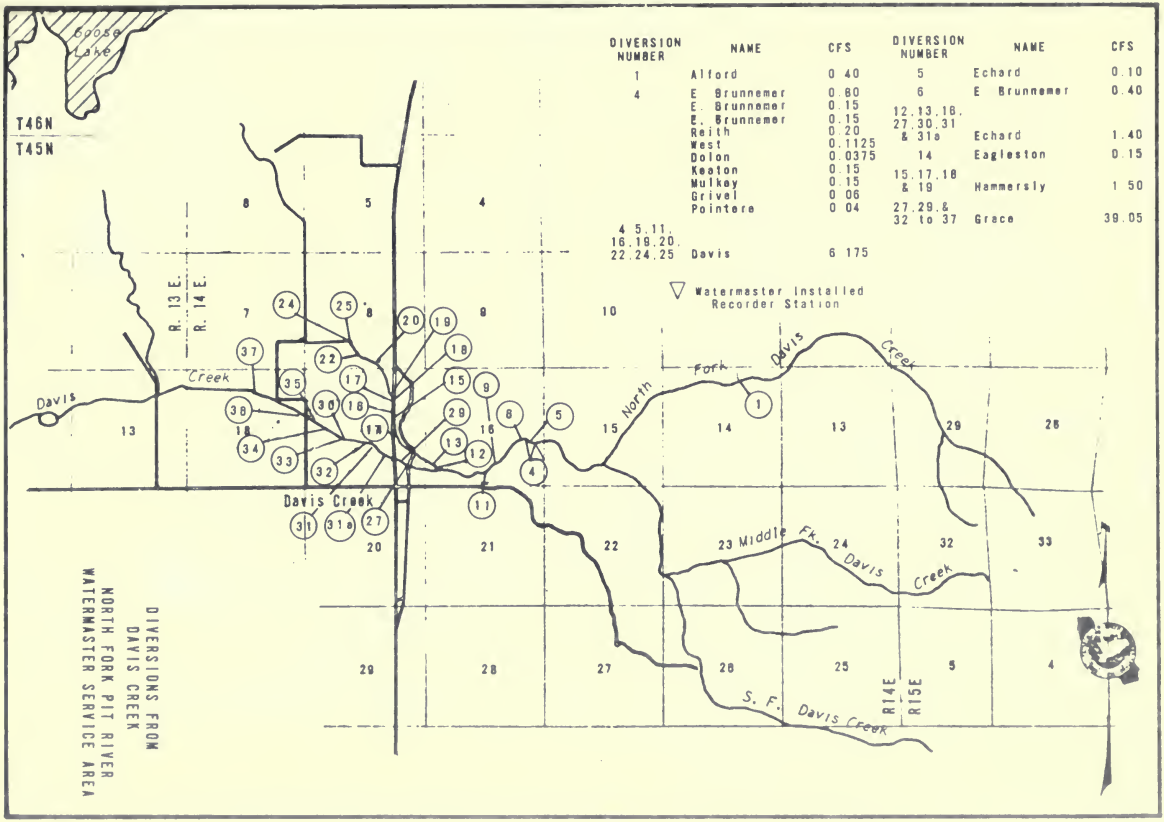


Diversion Number	Owner	CFS	
5	W.E Butler	0 99	
6	Keller	0 02	3 cfs non-
	Henderson	0 03	consumptive
	Stevens	0 33	
	Beachler	0 15	
7diverted at 8	Walter Butler	0 40	for two 6-
	Henderson	0 72	day periods
8	California ditch		
	Nelson	0 70	
	Hinton	1 39	
	J. Cundiff	0 57	
	E. Lawson	0 33	
	H Cundiff	0 66	
	L Pochop	0 30	
	Smith	0 08	
	Cloud	0 62	
	Steward	0 55	
	T. Lawson	1 05	
9 10	A. Butler	0 97	diverted at 8
11	Boutin	0 02	diverted at 6
12	Johnston	0 02	diverted at 6
14,1C	Robnett	3 89	
13	T Lawson	8 48	
	Gage	0 64	

Diversion Number	Owner	CFS
1	Allen	(Not used)
2	Allen	1 60
3	Fleming	4 60
	Perry	1 20
4	Vincent (pipeline)	4 10
5	Fleming	1 15
6	U R Ranch	1 60
	Perry	1 10

All diversions below 6 belong to Vincent and are used only during high flows early in the spring

TOTAL 15 35



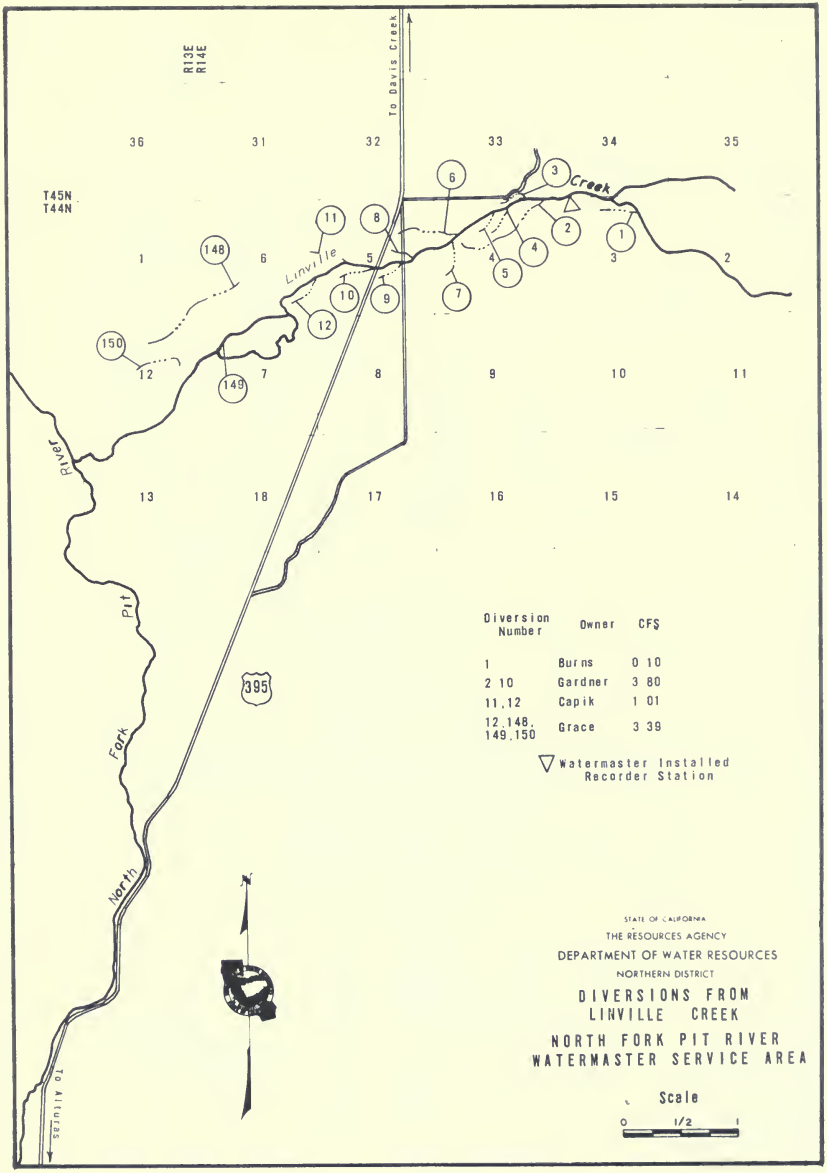
DIVERSION NUMBER	NAME	CFS
1	Alford	0.40
4	E. Brunnemer	0.80
	E. Brunnemer	0.15
	E. Brunnemer	0.15
	Reith	0.20
	West	0.1125
	Dolon	0.0375
	Keaton	0.15
	Mulkey	0.15
	Grivel	0.06
	Pointere	0.04
4.5.11. 16.19.20. 22.24.25	Davis	6.175

DIVERSION NUMBER	NAME	CFS
5	Echard	0.10
6	E. Brunnemer	0.40
12.13.18. 27.30.31 & 31a	Echard	1.40
14	Eagleston	0.15
15.17.18 & 19	Hammersly	1.50
27.29.& 32 to 37	Grace	39.05

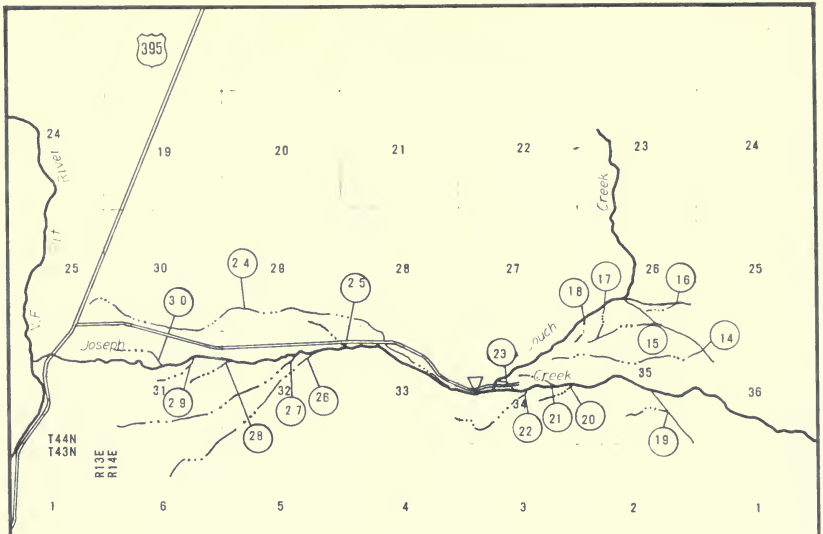
DIVERSIONS FROM DAVIS CREEK, NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Figure 1jb

Figure 13c


R13E
R14E
To Davis Creek
36
31
32
33
34
35
T45N
T44N
1
6
5
4
3
2
12
7
8
9
10
11
13
18
17
16
15
14
Linville
Creek
148
150
149
395
River
Pit
Fork
North
To Alturas
Diversion Number
Owner
CFS
1
Burns
0 10
2 10
Gardner
3 80
11,12
Capik
1 01
12,148, 149,150
Grace
3 39
Watermaster Installed Recorder Station
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM LINVILLE CREEK
NORTH FORK PIT RIVER WATERMASTER SERVICE AREA
Scale
0
1/2

T44N., R14E M.D.B. & M.
Franklin Creek
395
4 3
9 10
5 4
8 9
9 10
1815
8 9
1718
8 5
7 8
7 8
18 17
DIVERSION NUMBER
NAME
CFS
2 to 4
Grace
0.53
5 & 6
Grace
0.46
7 & 8
Gardner
2.54
9 to 11x
Grace
0.40
13 & 14
Quinn
1.00
17 to 22 & 25
Grace
2.93
23.24.26
Quinn
1.31
Watermaster installed Recorder Station
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM FRANKLIN CREEK
NORTH FORK PIT RIVER WATERMASTER SERVICE AREA



Diversion Number	Owner	CFS
14 to 18	U.S Forest Service	1.15 (net consumptive use)
19	McQueen	
20 to 24	Rice	1.28 (net consumptive use)
22	Russell	0 40
24	Russell	0.50
24.25	Franks	2.53
	Rice	0.87
26	U.S. Indian Service	
27 to 30	Franks	3.55
	TOTAL	11 98

△ Watermaster Installed Recorder Station

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM JOSEPH CREEK

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Scale
0 1/2 1

Figure 131

DIVERSION NUMBER	NAME	CFS
31 to 36		
38 to 40	Neer	1 29
54 to 56a		
37	Armor	0 02
37, 41 to 45	DeWitt	1 34
46 to 53		
57 to 59, 61	Brown	1 25
60	Diversion to Stony Canyon Creek	4 40
62, 63	Hart	0 25
64, 65	Treon	0 40
66 to 70	Spaulding and Beebe	1 14
71 to 74	Lowes	0 75
159	Diversion to Cedar Creek	5 00

▽ Watermaster Installed Recorder Station

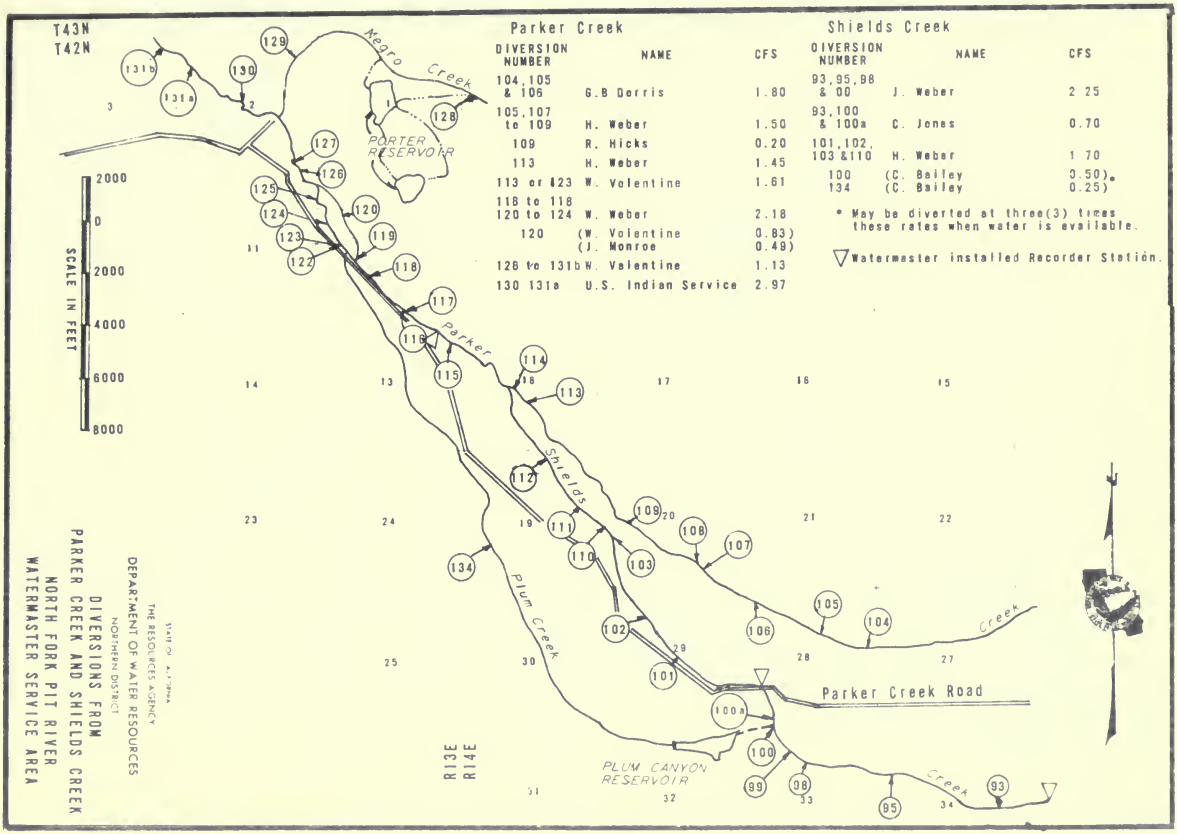
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM THOMS CREEK

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Scale 0 1/2 1

T 43 N
T 42 N
R 14 E
R 13 E
Diversion Number
Owner
CFS
84-86 Russell 1.00
86 Stanton 0.20
87-91 Stains 2.00
92 U.S. Indian Service 1.35
TOTAL 4.55
Gleason Creek
Parker Creek
N.F. PIT RIVER
395
299
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
GLEASON CREEK
NORTH FORK PIT RIVER
WATERMASTER SERVICE AREA
Scale of Miles
0 1



Parker Creek

DIVERSION NUMBER	NAME	CFS
104,105 & 106	G.B Dorris	1.80
105,107 to 109	H. Weber	1.50
109	R. Hicks	0.20
113	H. Weber	1.45
113 or 123	W. Volentine	1.61
118 to 118		
120 to 124	W. Weber	2.18
120	(W. Volentine	0.83)
	(J. Monroe	0.49)
126 to 131b	W. Valentine	1.13
130 131a	U.S. Indian Service	2.97

Shields Creek

DIVERSION NUMBER	NAME	CFS
93,95,98 & 00	J. Weber	2 25
93,100 & 100a	C. Jones	0.70
101,102, 103 &110	H. Weber	1 70
100	(C. Bailey	0.50)*
134	(C. Bailey	0.25)

* May be diverted at three(3) times these rates when water is available.

▽ Watermaster installed Recorder Station.

Figure 13

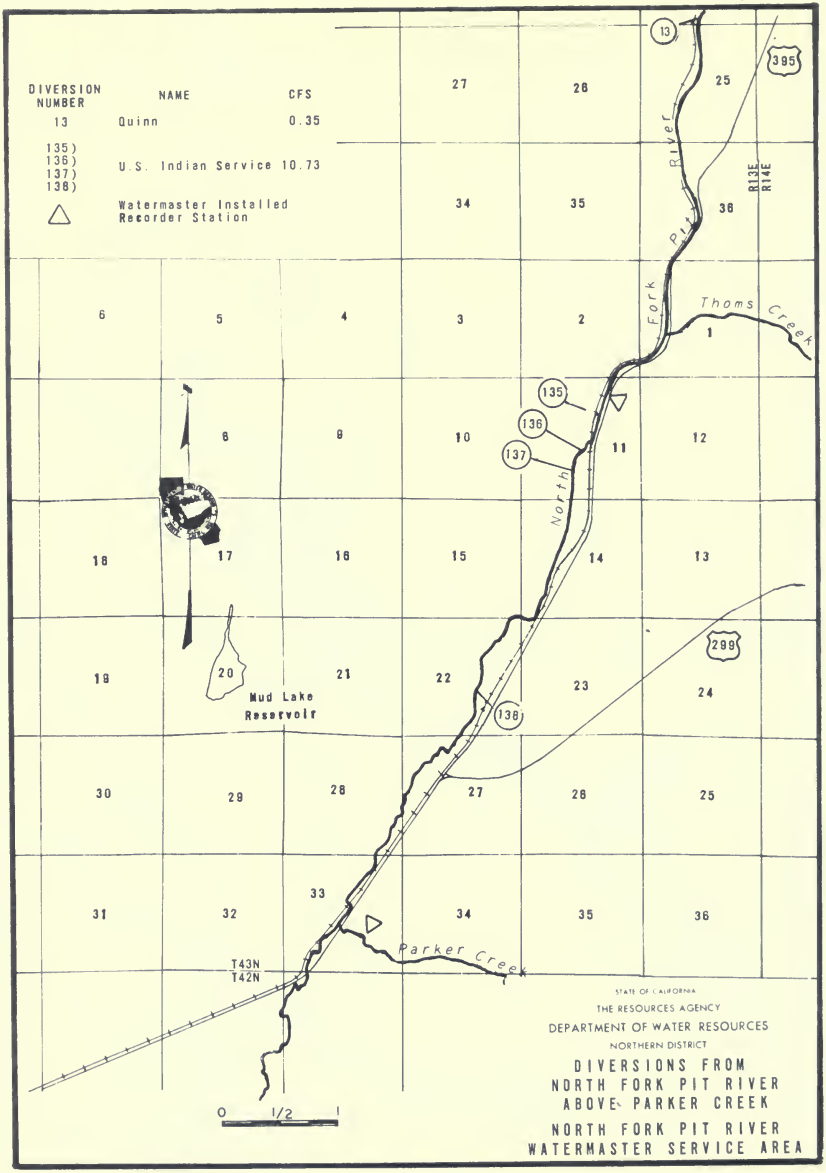
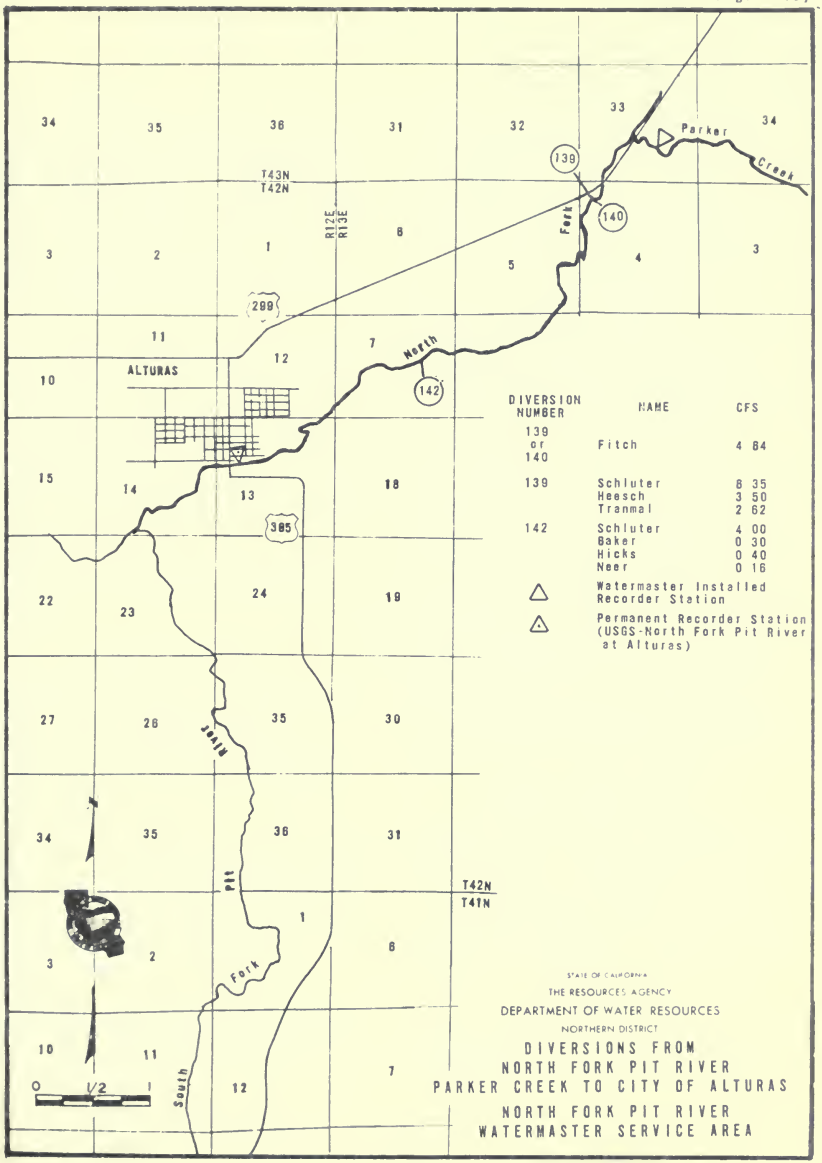

DIVERSION NUMBER
NAME
CFS
13 Quinn 0.35
135)
136)
137)
138) U.S. Indian Service 10.73
Watermaster Installed Recorder Station
13
395
299
135
136
137
138
North Fork Pit River
Thoms Creek
Parker Creek
Mud Lake Reservoir
R13E
R14E
T43N
T42N
0 1/2 1
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM NORTH FORK PIT RIVER ABOVE PARKER CREEK
NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Figure 13j



DIVERSION NUMBER	NAME	CFS
139 or 140	Fitch	4 84
139	Schluter	8 35
	Heesch	3 50
	Tranmal	2 62
142	Schluter	4 00
	Baker	0 30
	Hicks	0 40
	Neer	0 16

△ Watermaster Installed Recorder Station

△ Permanent Recorder Station (USGS-North Fork Pit River at Alturas)

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM NORTH FORK PIT RIVER PARKER CREEK TO CITY OF ALTURAS

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Shackleford Creek Watermaster Service Area

The Shackleford Creek service area is located in western Siskiyou County near the town of Fort Jones in Scott Valley. The major sources of water supply for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about 2 miles wide by 6 miles long with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River.

A map of the Shackleford Creek stream system is presented as Figure 94, page 105.

Basis of Service

The Shackleford Creek watermaster service area was created on November 6, 1950. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 13775, Siskiyou County Superior Court, dated April 3, 1950.

The allotments are defined in four separate schedules. The Upper Shackleford Creek Group and Lower Shackleford Creek Group each have seven priority classes and the Upper Mill Creek Group and Lower Mill Creek Group each have three priority classes.

Along with these schedules of allotments during the irrigation season, the decree defines two storage rights upstream of all other diversions. This stored water is released late in the irrigation season and commingled with the natural flow of Shackleford Creek for use by the owners.

There are presently 42 water users in the service area with allotments totaling 64.73 cfs.

Water Supply

The water supply for Shackleford Creek is derived from snowmelt runoff, springs and seepage, and supplemental stored water released from Cliff Lake and Campbell Lake. These lakes are located near the headwaters of Shackleford Creek.

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep, mountainous terrain of the northeasterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow for second priority allotments in the Shackleford Ditch.

Method of Distribution

Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about 6 miles and a capacity of about 12 cubic feet per second.

1973 Distribution

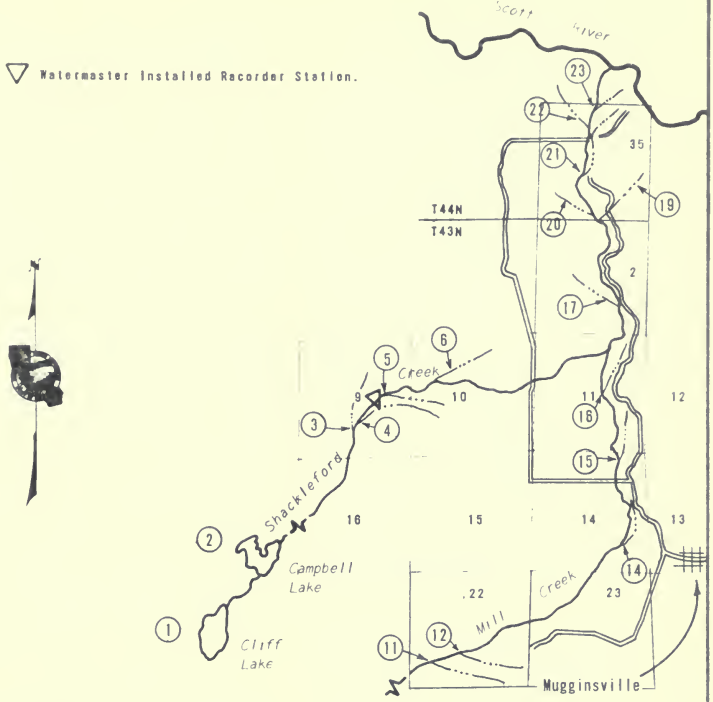
Watermaster service began June 1 in the Shackleford Creek service area and

continued until September 30, with George H. Pape, Associate Engineer, Water Resources, as watermaster.

The available water supply was somewhat below normal early in the season and far below normal after the end of June. The available supply was too low to supply fourth priority water rights in early July, and as flow continued to recede, third priorities had to be shut off by the end of July. After that there were only first and part of second priority allotments available through September in decreasing amounts.

Special Occurrences

Litigation regarding certain waters of Shackleford Creek was reopened in 1973. This litigation was based on alleged misappropriation of water allotted to the Indian lands under the decree. As of this printing, the resulting judgment has not been entered.



Diversion Number	Owner	CFS	
1	Cliff Lake		
2	Campbell Lake		
3	R. Eastlick ditch	3.5	
4	Shackleford ditch	11.00	
5	Howard-Jones ditch	5.20	
6	Camp ditch	5.00	
11	Eastlick ditch	10.62	
12	Couch ditch	.62	out of 11 or 12
14	China ditch	1 40	
15	Dangel ditch	0.50	
16	Denny Ber ditch	0.50	
17	Freita ditch	6 60	
19	Hammond-Crawford-Lewis ditch	3.60	plus rights not in service area
20	Burton-Mesnikas ditch	5.60	
22	Burton W.	1.20	In either 22 or23
23	Burton E.		

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM SHACKLEFORD CREEK AND MILL CREEK

SHACKLEFORD CREEK WATERMASTER SERVICE AREA

Scale
0 1/2 1

Shasta River Watermaster Service Area

The Shasta River service area is situated in the central part of Siskiyou County, south and east of the town of Yreka.

The source of water supply is Shasta River and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson Creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy Creeks, and Shasta River west of U. S. Highway 99, rises on the eastern slopes of the Trinity Mountains. All these streams join the main stem Shasta River above Dwinnell Reservoir near the town of Weed. As the Shasta River flows northward from Dwinnell Reservoir to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the western slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

The place of use is in Shasta Valley which is approximately 30 miles long and 30 miles wide. The valley has numerous small, coneshaped, volcanic hillocks scattered throughout its central portion that produce the effect of dividing the area into a number of distinctively separate parts. Because of these formations only about 141,000 acres of the approximately 507,000 acres within the valley are irrigable. The valley floor elevation averages approximately 3,000 feet.

Maps of the major stream systems in the Shasta River service area are presented as Figures 15 through 15i, pages 115 through 124.

Basis of Service

The Shasta River watermaster service area was created on March 1, 1933. The appropriative water rights on this stream system were determined by a statutory adjudication which resulted in Decree No. 7035, Siskiyou County Superior Court, dated December 29, 1932.

The decree describes the water rights of the entire stream system in alphabetical order of users. The rights supervised by the watermaster are broken down into eight separate schedules. These are: Shasta River above its confluence with Big Springs Creek, 43 priorities; Boles Creek, 20 priorities; Beaughan Creek, 5 priorities; Jackson Creek, 7 priorities; Carrick Creek, 13 priorities; Parks Creek, 25 priorities; Shasta River below its confluence with Big Springs Creek and Big Springs Creek and tributaries, 29 priorities; and Little Shasta River, 7 priorities. Additional schedules include Willow Creek, Yreka Creek, and miscellaneous independent springs, gulches, and sloughs, but these are not included in the service area.

Montague Water Conservation District has appropriative rights for storage of Shasta River and Parks Creek water in Dwinnell Reservoir (Lake Shastina). By agreement with the District, five nearby downstream users receive water from storage in lieu of their decreed continuous flow allotments. The watermaster handles the reservoir releases for these users as well as for the district itself.

A peculiarity of the Shasta River decree is that it defines only appropriative rights and excludes a number of riparian users on the lower Shasta River. Owners of these rights are not subject to watermaster supervision, causing considerable distribution problems during seasons of short water supply.

There are presently 110 water users in the service area with allotments totaling 602.322 cubic feet per second.

Water Supply

The water supply for Shasta Valley is derived from snowmelt runoff, springs and underground flow, and occasional summer thundershowers. In several portions of the stream system the springs from underground flow are adequate to supply most allotments throughout the season. Much of the underground flow is derived from the northern slopes of Mount Shasta, which rises to an elevation of 14,162 feet at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is negligible surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River derive a major portion of their water supply from snowmelt runoff. This flow is usually adequate to supply all allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Dwinnell Reservoir, Big Springs, and Lower Shasta River have enough runoff from springs to supply a large percentage of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River service area are presented in Tables 32, 33, 35, 36, 37 and 38; pages 111, 113, and 114. The daily mean storage in Dwinnell Reservoir is presented in Table 34, page 112.

Method of Distribution

Irrigation of permanent pasture and alfalfa lands is accomplished principally by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands.

Water is diverted primarily by diversion dams and then conveyed by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 60 cubic feet per second and a length of about 14 miles. Water is also supplied into ditch systems by pumped diversions, the three largest belonging to two irrigation districts and a private water users association. Some riparian lands are also served by pump diversions.

Many privately owned storage reservoirs exist in the area. Water storage from these reservoirs is used to supplement continuous-flow allotments.

Because of their large rights, close surveillance of two public agencies, Grenada and Big Springs Irrigation Districts, and the privately operated Shasta River Water Users Association, is very important, particularly in dry years. Control of releases from Montague Water Conservation District's Dwinnell Reservoir (Lake Shastina) is another responsibility of the watermaster. This includes measurement of deliveries of stored water to users just below the dam.

1973 Distribution

Watermaster service began April 6 in the Shasta River service area and continued through September 30 with George H. Pape, Associate Engineer, Water Resources, as watermaster.

The available water supply was generally far below average in most of the service area during the season.

Parks Creek. The flow in Parks Creek was sufficient to supply all allotments (25 priorities) until early June. Some water continued to be diverted into the Yreka Ditch until mid-July. The first priority allotments of 6 cubic feet per second were available until late July, after which first priority allotments were available in decreasing amounts for the remainder of the season. Water users downstream from the lowest first priority diversion received a portion of their allotments during the latter part of

the season from return flow and from water rising in the gravel streambed.

Upper Shasta River. During early spring, enough water was available to satisfy all allotments (eight priorities). As the flow decreased, the following levels of priority allotments were met: June 2 - all of fourth priority; June 14 - all of third priority (Yreka Ditch main allotment); and September 14 (the seasonal low) - 9 percent of third priority.

Shasta River from Boles Creek to Dwinnell Reservoir. Boles Creek and Shasta River from Boles Creek to Dwinnell Reservoir were operated as one stream, under a long-standing oral agreement among the water right owners, with water being distributed on an equal and correlative basis. Adequate water was available to satisfy all allotments until the middle of August. Thereafter diversions were cut to as low as 55 percent. In late September the flow increased to again allow diversion of 100 percent of allotments.

Beaughan Creek. The flow of Beaughan Creek was sufficient to satisfy most demands (five priorities) until mid-August. Thereafter the creek was occasionally down to third priority. The creek is routed through a mill pond owned by the International Paper Company which uses approximately 35 percent of the flow for industrial purposes.

Carrick Creek. The water supply in Carrick Creek was adequate to satisfy all allotments (13 priorities) during the entire season.

Little Shasta River. Enough water was available in Little Shasta River to satisfy all fifth priority allotments (seven priorities) until early May. After that date, close regulation became necessary to adequately distribute this priority. The flow continued to decrease to approximately 60 percent of the fourth priority allotments by mid-August. It then stayed constant for the remainder of the season.

The daily discharge of Little Shasta River near Montague is presented in Table 36, page 113. This runoff is augmented by rising water along the river channel, and by substantial inflow from Cleland Springs, a tributary approximately 2 miles below the stream gaging station. Therefore, considerably more water is available for distribution at downstream diversion points than is indicated in the discharge table.

Dwinnell Reservoir. Releases from Dwinnell Reservoir to the Montague Water Conservation District commenced on April 4 and continued until October 10. Reservoir operation data for the 1973 season are shown in Tables 34 and 35, pages 112 and 113.

By agreement with the Montague Water Conservation District, water users on Shasta River below Dwinnell Reservoir received stored water from the reservoir on demand in lieu of their natural flow rights. The agreement allotment totals and the amount delivered to each user this season are shown in the tabulation on the following page.

Big Springs. The flow of Big Springs was sufficient to satisfy approximately 50 percent of third priority allotments through the first half of the season. Usually during July, August, and September the flow in Big Springs increases as snowmelt from higher elevations on Mount Shasta percolates into the ground and reappears as surface flow at Big Springs Lake. Normally, Big Springs Irrigation District, a third priority water right owner, is able to pump its full allotment during the latter part of the season. This year, however, the District's pumping was reduced by as much as 50 percent during this period.

Lower Shasta River. The water supply in Lower Shasta River was sufficient to satisfy all allotments (29 priorities) during April and May. However, during the remainder of the season close regulation was necessary to adequately distribute

the flow to the first priority water right owners at the lower end of the river. On numerous occasions the available flow was insufficient to supply all priorities. The Grenada Irrigation District, the lowest priority water right owner, was frequently required to cut down on its pumping.

Late in the 1973 irrigation season the watermaster received specific authority to regulate the distribution of water between two parties on the Antonio Ditch, diverting from the Lower Shasta River. This authority was given the watermaster by Order No. 26348 of the Superior Court of Siskiyou County, dated September 8, 1973.

DELIVERIES TO NATURAL FLOW WATER RIGHT OWNERS
BELOW DWINNELL RESERVOIR - 1973

Name of Water Right Owner	Allotment in Acre-Feet	Allotment Delivered from Dwinnell Reservoir Acre-feet	% of Allotment
Flying L Ranch	198	-0-	-0-
Frank Ayers	464	464	100
J. N. Taylor	1,200	1,200	100
W. W. Valentine:			
Hole-in-the-Ground Ranch	596	596	100
Seldom Seen Ranch	924	924	100
Totals	3,382	3,184	94

TABLE 32

SHASTA RIVER AT EDGEWOOD

Day	March	April	May	June	July	August	September	Day
1			43*	31	17	5.8		1
2			43	28	17	5.7		2
3			38	28	18	5.4		3
4			48	25	15	6.1		4
5			42	19	16	5.8		5
6			41	24	16	5.4**		6
7			38	26	17			7
8			38	22	14			8
9			33	22	13			9
10			40	21	13			10
11			33	19	13			11
12			39	22	13			12
13			39	26	12			13
14			53	24	9.8			14
15			46	24	11			15
16			38	27	10			16
17			37	22	9.1			17
18			37	22	9.0			18
19			37	23	9.3			19
20			32	21	8.5			20
21			39	22	8.1			21
22			29	19	9.0			22
23			29	20	7.1			23
24			30	21	7.4			24
25			29	20	7.8			25
26			30	19	7.1			26
27			31	19	6.8			27
28			34	20	6.9			28
29			35	18	6.1			29
30			29	17	6.2			30
31			28		5.6			31
Mean			36.7	22.3	10.9	5.7		Mean
Runoff In Acre-Feet			2257	1327	672	68		Runoff In Acre-Feet

* Beginning of Record
** End of Record

TABLE 33

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

Day	March	April	May	June	July	August	September	Day
1					7.9	4.5		1
2					8.1	4.5		2
3					7.8	4.6		3
4					7.6	4.4		4
5					7.4	4.3		5
6					7.7	4.3		6
7					7.7	4.3		7
8					7.9	4.0		8
9					7.3	4.0**		9
10					7.3			10
11					7.2			11
12					7.2			12
13				11*	7.2			13
14				11	7.1			14
15				10	7.2			15
16				9.4	7.3			16
17				9.4	6.9			17
18				9.1	6.9			18
19				10	8.4			19
20				9.3	8.5			20
21				8.9	6.3			21
22				8.8	5.9			22
23				8.9	5.8			23
24				8.9	5.8			24
25				8.8	5.2			25
26				8.6	5.2			26
27				8.2	5.0			27
28				8.0	5.1			28
29				8.0	4.8			29
30				7.8	4.6			30
31					4.5			31
Mean				9.1	6.6	4.3		Mean
Runoff In Acre-Feet				325	406	77		Runoff In Acre-Feet

* Beginning of Record
** End of Record

SHASTA RIVER WATERMASTER SERVICE AREA
October 1, 1972 through September 30, 1973 (in acre-feet)

TABLE 34
DAILY MEAN STORAGE IN DWINNELL RESERVOIR

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Day
1	16,620	16,260	18,180	21,880	27,860	33,840	35,270	31,420	28,680	22,330	15,440	9,610	1
2	16,570	16,270	18,210	21,930	27,950	34,090	35,270	31,230	28,500	22,050	15,240	9,440	2
3	16,510	16,280	18,270	21,990	28,010	34,360	35,180	31,070	28,330	21,810	15,030	9,280	3
4	16,470	16,330	18,270	22,030	28,140	34,450	35,030	30,880	28,160	21,570	14,830	9,120	4
5	16,400	16,360	18,270	22,070	28,340	34,530	34,840	30,720	27,980	21,330	14,600	8,960	5
6	16,330	16,400	18,270	22,120	28,460	34,640	34,670	30,560	27,820	21,080	14,410	8,820	6
7	16,260	16,430	18,270	22,130	28,610	34,690	34,430	30,400	27,580	20,810	14,190	8,700	7
8	16,200	16,480	18,270	22,170	28,730	34,760	34,260	30,240	27,380	20,580	13,970	8,580	8
9	16,100	16,520	18,270	22,230	28,910	34,770	34,040	30,080	27,140	20,310	13,750	8,460	9
10	16,040	16,560	18,270	22,310	29,150	34,820	33,850	29,940	26,950	20,090	13,540	8,340	10
11	16,030	16,580	18,270	22,490	29,360	34,860	33,680	29,840	26,690	19,860	13,330	8,240	11
12	16,000	16,630	18,270	22,730	29,510	34,870	33,580	29,710	26,510	19,640	13,110	8,070	12
13	16,000	16,690	18,560	22,940	29,600	34,930	33,500	29,620	26,300	19,410	12,940	7,840	13
14	16,010	16,750	18,630	23,110	29,710	34,940	33,400	29,510	26,080	19,200	12,750	7,800	14
15	16,030	16,880	18,690	23,280	29,780	34,940	33,280	29,500	25,870	18,980	12,550	7,680	15
16	16,040	17,190	18,770	24,280	29,860	34,980	33,140	29,570	25,680	18,770	12,360	7,530	16
17	16,040	17,440	18,900	25,150	29,920	35,010	33,000	29,680	25,500	18,550	12,180	7,390	17
18	16,040	17,550	19,120	25,840	29,980	35,040	32,890	29,760	25,310	18,320	12,000	7,260	18
19	16,040	17,620	19,470	26,360	30,020	35,080	32,730	29,820	25,100	18,060	11,840	7,210	19
20	16,040	17,700	19,720	26,620	30,060	35,110	32,620	29,840	24,880	17,990	11,540	7,120	20
21	16,050	17,750	19,960	26,810	30,080	35,180	32,540	29,810	24,650	17,780	11,460	7,040	21
22	16,060	17,810	20,450	26,990	30,140	35,200	32,510	29,760	24,430	17,560	11,290	6,990	22
23	16,090	17,870	20,730	27,170	30,160	35,250	32,430	29,680	24,180	17,350	11,100	6,930	23
24	16,100	17,900	21,030	27,290	30,640	35,270	32,300	29,600	23,960	17,130	10,900	6,890	24
25	16,120	17,940	21,220	27,330	31,200	35,270	32,160	29,530	23,700	16,910	10,740	6,840	25
26	16,150	17,970	21,330	27,430	32,400	35,270	32,000	29,530	23,460	16,700	10,590	6,810	26
27	16,170	18,030	21,430	27,500	32,920	35,270	31,890	29,450	23,260	16,520	10,420	6,780	27
28	16,200	18,070	21,570	27,600	33,500	35,270	31,790	29,300	23,020	16,320	10,260	6,750	28
29	16,220	18,100	21,640	27,680		35,270	31,700	29,230	22,760	16,140	10,100	6,730	29
30	16,230	18,140	21,720	27,730		35,270	31,570	29,000	22,520	15,940	9,940	6,710	30
31	16,250		21,790	27,780		35,270		28,850		15,740	9,790		31

SHASTA RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 35

OWINNELL RESERVOIR

Day	April	May	June	July	August	September	October	Day
1		60	61	68	71	51E	10	1
2		63	60	71	69	51E	12	2
3		65	57	70	68	51E	13	3
4	15*	68	57	70	69	51	15	4
5	44	64	54	70	69	51	15	5
6	42	61	53	72	70	50	15	6
7	51	62	58	72	70	48	15	7
8	58	63	61	72	71	43	14	8
9	61	83	64	71	71	40	10**	9
10	64	53	65	70	72	38		10
11	61	51	68	71	69	44		11
12	63	58	54	67	65	45		12
13	61	59	65	66	62	47		13
14	61	64	64	61	61	47		14
15	61	66	62	61	61	47		15
16	58	65	58	61	59	47		16
17	59	65	54	61	58	47		17
18	60	65	54	62	58	45		18
19	59	63	53	67	58	44		19
20	47	63	55	70	58	36		20
21	38	64	58	71	58	29		21
22	27	61	61	71	60E	25		22
23	31	61	61	71	61E	12		23
24	41	63	61	69	65E	12		24
25	47	61	64	68	64E	10		25
26	55	50	67	67	58E	8.0		26
27	60	44	67	66	58E	8.0		27
28	60	45	65	66	58E	8.0		28
29	60	48	66	68	58E	8.0		29
30	60	57	67	72	55E	8.0		30
31		59		72	52E			31
Mean	51.9	59.7	60.6	66.2	63.1E	35.0E	13.2	Mean
Runoff In Acre-Feet	2781	3677	3618	4193	3880E	2081E	236	Runoff In Acre-Feet

* Beginning of Record
** End of Record
E Estimated

TABLE 36

LITTLE SHASTA RIVER NEAR MONTAGUE

Day	March	April	May	June	July	August	September	Day
1	14	17	26	13	5.3	3.6	3.5	1
2	12	15	25	12	5.1	3.5	3.5	2
3	12	16	25	11	5.0	3.5	3.5	3
4	11	19	26	11	5.0	3.6	3.4	4
5	9.7	24	25	10	4.9	3.5	3.4	5
6	11	27	24	9.7	4.9	3.4	3.4	6
7	9.7	26	23	9.3	4.8	3.5	3.5	7
8	9.5	25	22	9.0	4.7	3.4	3.5	8
9	10	27	22	8.8	4.6	3.5	3.5	9
10	17	28	21	8.6	4.5	3.5	3.4	10
11	18	30	20	8.3	4.5	3.5	3.4	11
12	13	31	20	8.2	4.7	3.5	3.4	12
13	12	32	20	8.2	4.3	3.5	3.4	13
14	11	26	21	8.1	4.2	3.4	3.5	14
15	12	26	21	7.8	4.1	3.4	3.5	15
16	13	27	20	7.7	4.9	3.3	3.5	16
17	13	31	19	7.6	5.6	3.4	3.5	17
18	15	24	18	7.3	4.5	3.4	3.6	18
19	18	22	17	7.0	4.4	3.3	6.1	19
20	14	20	18	6.6	4.4	3.3	5.6	20
21	14	21	18	6.3	4.3	3.3	4.3	21
22	15	24	15	6.2	4.2	3.3	4.6	22
23	15	28	15	6.3	4.0	3.3	5.5	23
24	18	28	19	6.1	3.9	3.5	7.2	24
25	18	30	18	5.9	3.8	3.7	5.6	25
26	19	32	15	5.7	3.7	3.5	3.9	26
27	18	38	14	5.8	3.7	3.3	3.7	27
28	15	31	13	5.6	3.8	3.2	3.5	28
29	14	29	12	5.5	3.7	3.2	3.4	29
30	15	27	13	5.4	3.7	3.2	3.4	30
31	17		15		3.6	3.3		31
Mean	13.8	25.9	19.2	7.9	4.4	3.4	4.0	Mean
Runoff In Acre-Feet	847	1541	1182	472	271	210	236	Runoff In Acre-Feet

SHASTA RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 37

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

Day	March	April	May	June	July	August	September	Day
1					22	9.0	20	1
2					15	15	11	2
3					13	12	15	3
4					13	10	22	4
5					13	8.0	16	5
6					16	10	18	6
7					12	15	12	7
8					16	14	14	8
9					14	15	18	9
10					14	19	16	10
11					6.0	18	13	11
12					11	21	13	12
13					15	14	24	13
14					9.0	16	16	14
15					10	18	17	15
16					21	14	19	16
17					13	16	19	17
18					10	18	18	18
19					15	14	21	19
20				15*	27	12	17	20
21				14	18	14	24	21
22				14	18	8.0	21	22
23				13	11	16	19	23
24				18	14	9.0	23**	24
25				11	15	14		25
26				11	17	18		26
27				12	16	23		27
28				9.0	16	16		28
29				9.0	13	15		29
30				16	14	11		30
31					19	14		31
Mean				12.9	14.7	14.4	17.8	Mean
Runoff In Acre-Feet				282	904	885	845	Runoff In Acre-Feet

* Beginning of Record
** End of Record

TABLE 38

SHASTA RIVER NEAR YREKA

Day	March	April	May	June	July	August	September	Day
1	226	78	101	52	15	25	14	1
2	214	72	88	68	18	13	14	2
3	202	84	69	52	15	9.4	21	3
4	197	90	65	32	15	5.7	23	4
5	214	88	84	27	15	17	22	5
6	218	82	82	26	11	21	21	6
7	212	82	78	25	12	15	23	7
8	205	78	69	25	17	9.0	24	8
9	205	76	51	27	21	17	23	9
10	203	52	51	24	19	21	26	10
11	206	49	49	27	18	22	30	11
12	204	49	45	27	16	26	31	12
13	206	84	44	30	16	23	29	13
14	206	90	60	30	14	21	25	14
15	203	113	110	35	9.7	14	25	15
16	198	99	90	41	11	8.7	20	16
17	197	90	88	30	9.9	9.9	19	17
18	207	99	78	27	17	12	22	18
19	202	74	66	29	25	14	28	19
20	187	65	61	22	39	14	110	20
21	217	74	71	18	53	12	125	21
22	197	78	59	14	40	12	110	22
23	170	62	54	22	26	9.3	109	23
24	155	70	55	19	24	8.9	122	24
25	160	64	63	23	22	12	120	25
26	138	51	66	22	15	22	100	26
27	67	55	43	24	15	25	90	27
28	76	60	47	18	20	18	109	28
29	70	74	48	13	19	22	109	29
30	78	90	40	14	21	19	118	30
31	84		53		29	19		31
Mean	178	75.7	65.4	28.1	19.9	16.0	55.4	Mean
Runoff In Acre-Feet	10960	4510	4020	1670	1230	986	3300	Runoff In Acre-Feet

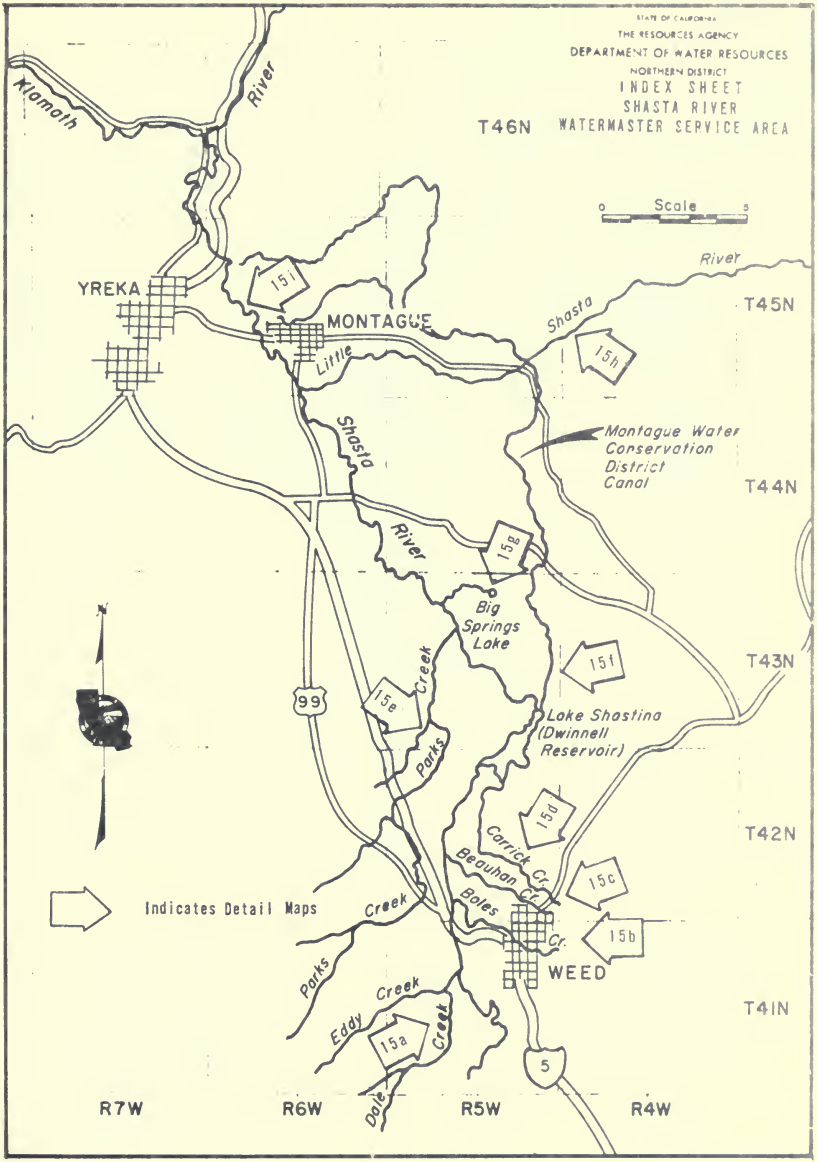
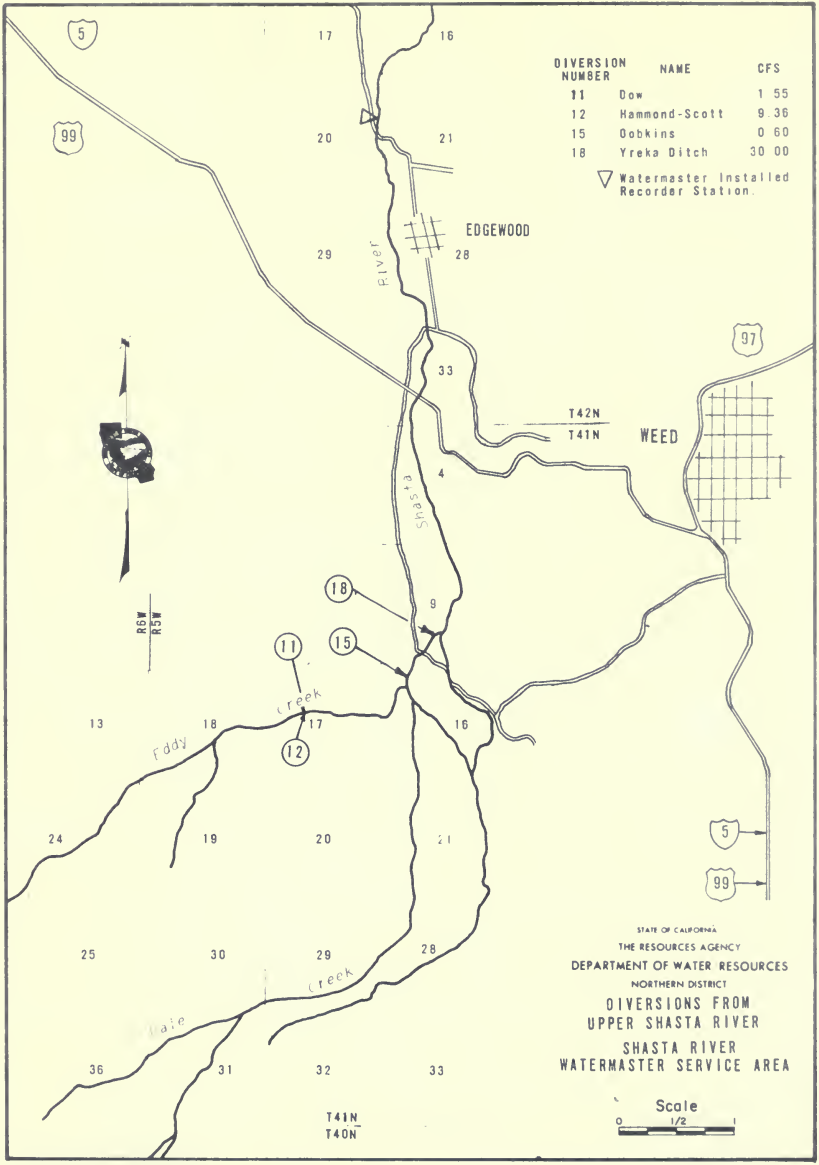
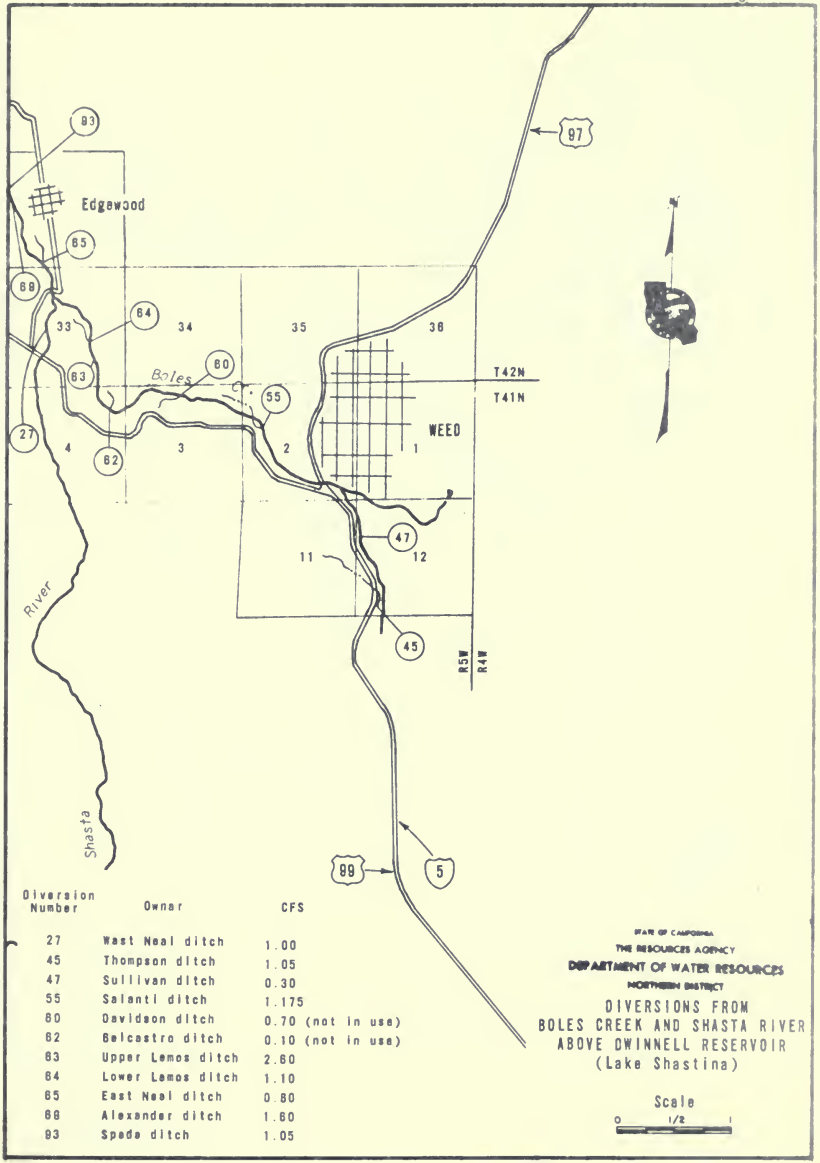

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
INDEX SHEET
SHASTA RIVER
WATERMASTER SERVICE AREA
T46N
Scale
Klamath River
YREKA
MONTAGUE
Little Shasta River
Shasta River
Montague Water Conservation District Canal
Big Springs Lake
Lake Shastina (Dwinnell Reservoir)
99
Parks Creek
Carrick Cr.
Beaughan Cr.
Boles Cr.
WEED
Eddy Creek
Dale Creek
5
15i
15h
15g
15f
15e
15d
15c
15b
15a
T45N
T44N
T43N
T42N
T41N
R7W
R6W
R5W
R4W
Indicates Detail Maps

Figure 15a


DIVERSION NUMBER
NAME
CFS
11 Dow 1 55
12 Hammond-Scott 9 36
15 Dobkins 0 60
18 Yreka Ditch 30 00
Watermaster Installed Recorder Station.
EDGEWOOD
WEED
T42N
T41N
T41N
T40N
R6W
R5W
Shasta River
Foddy Creek
Yreka Creek
5
99
97
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
UPPER SHASTA RIVER
SHASTA RIVER
WATERMASTER SERVICE AREA
Scale
0 1/2 1



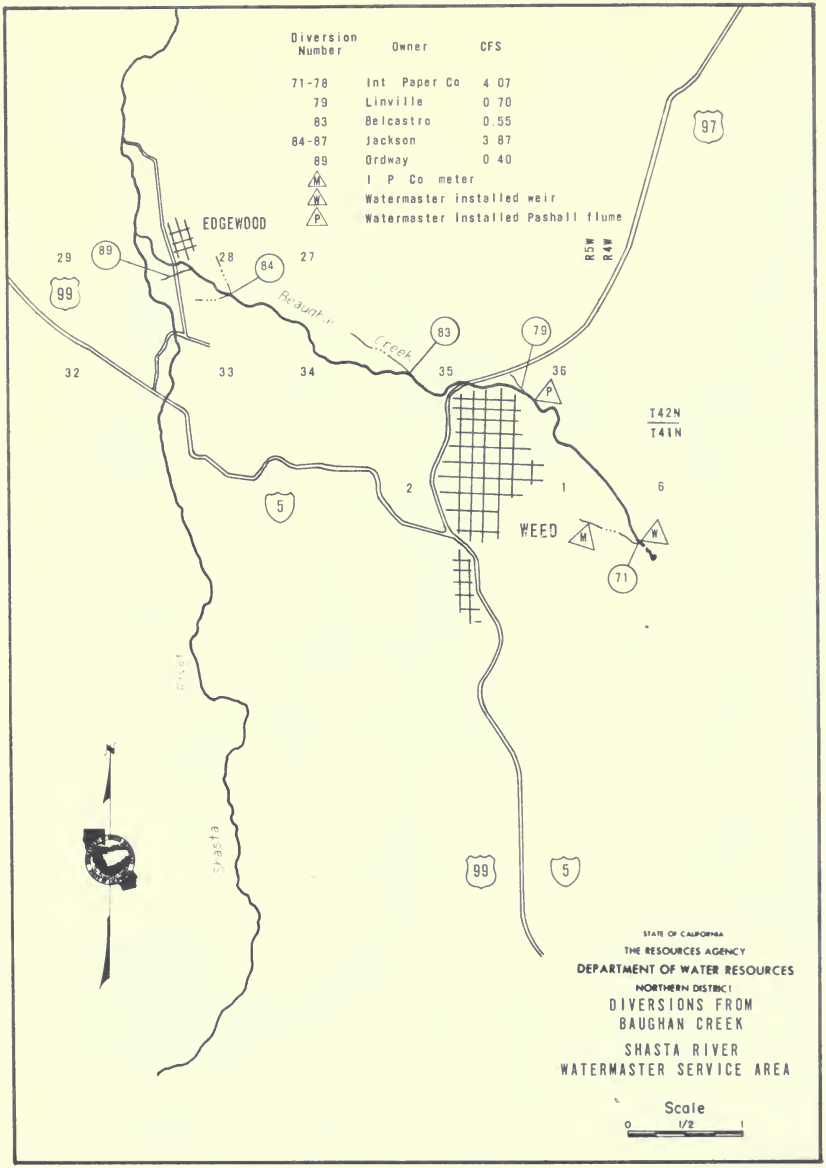
Diversion Number	Owner	CFS
27	West Neal ditch	1.00
45	Thompson ditch	1.05
47	Sullivan ditch	0.30
55	Salanti ditch	1.175
60	Davidson ditch	0.70 (not in use)
62	Belcastro ditch	0.10 (not in use)
63	Upper Lemos ditch	2.80
64	Lower Lemos ditch	1.10
65	East Neal ditch	0.80
66	Alexander ditch	1.60
93	Spada ditch	1.05

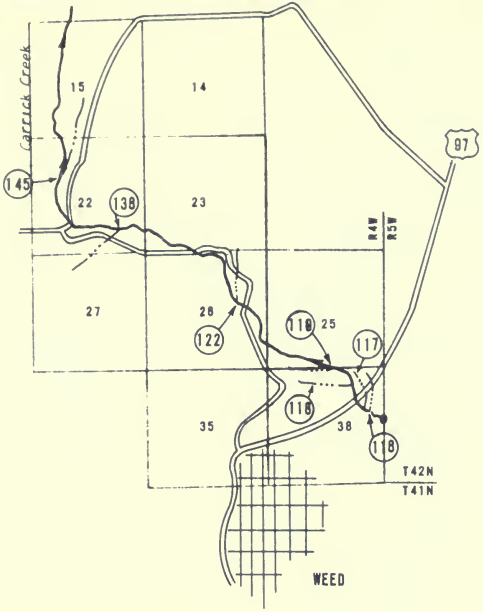
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
BOLES CREEK AND SHASTA RIVER
ABOVE DWINNELL RESERVOIR
(Lake Shastina)

Scale
0 1/2 1

Figure 15c


Diversion Number
Owner
CFS
71-78 Int Paper Co 4 07
79 Linville 0 70
83 Belcastro 0.55
84-87 Jackson 3 87
89 Ordway 0 40
M I P Co meter
W Watermaster installed weir
P Watermaster installed Pashall flume
EDGEWOOD
WEED
Beaughan Creek
Shasta River
R5W
R4W
T42N
T41N
97
99
5
89
84
83
79
71
29
28
27
32
33
34
35
36
2
1
6
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
BAUGHAN CREEK
SHASTA RIVER
WATERMASTER SERVICE AREA
Scale
0
1/2
1



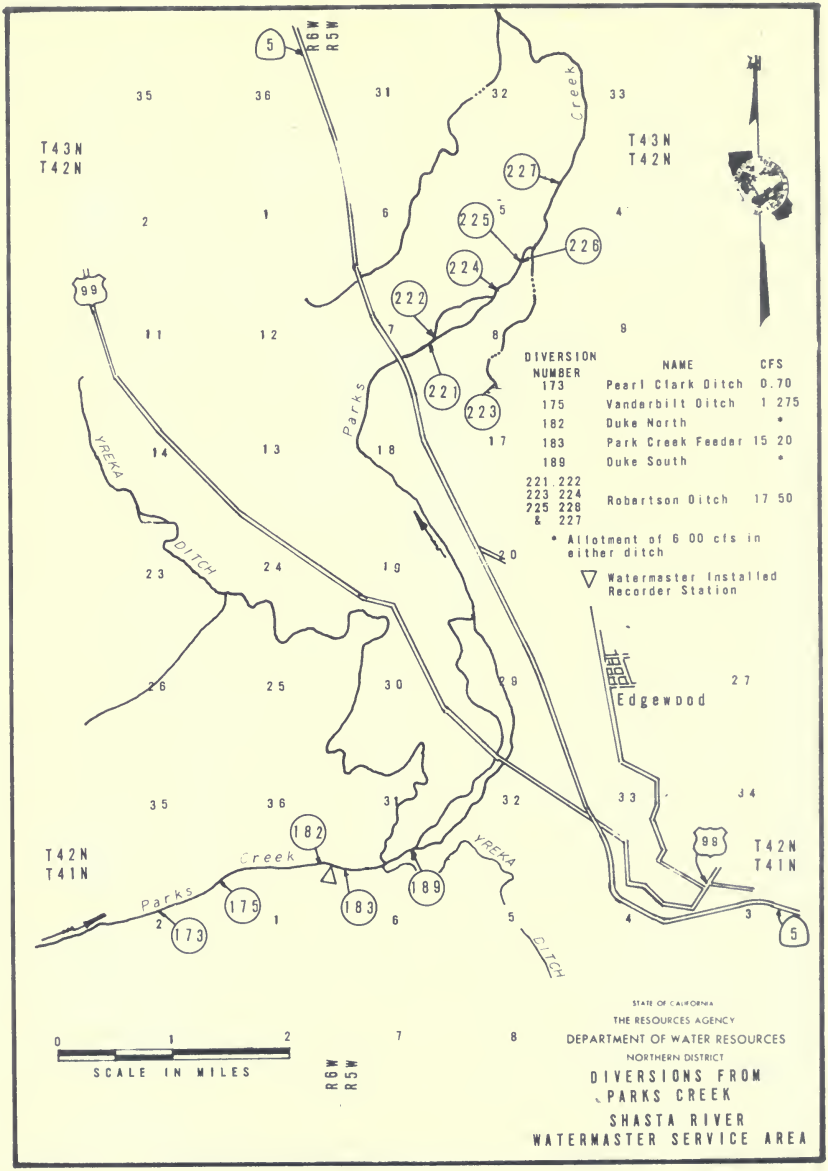
Diversion Number	Owner	CFS
116	Albee ditch	2.20
117	Carrick ditch	2.20
118	Belcestro-Vidrickson ditch	0.40
119	Vidrickson ditch (Can also be used in 118)	0.40
122	Hoy ditch	0.88
138	Jackson ditch	1.20
145	Mills ditch	1.10

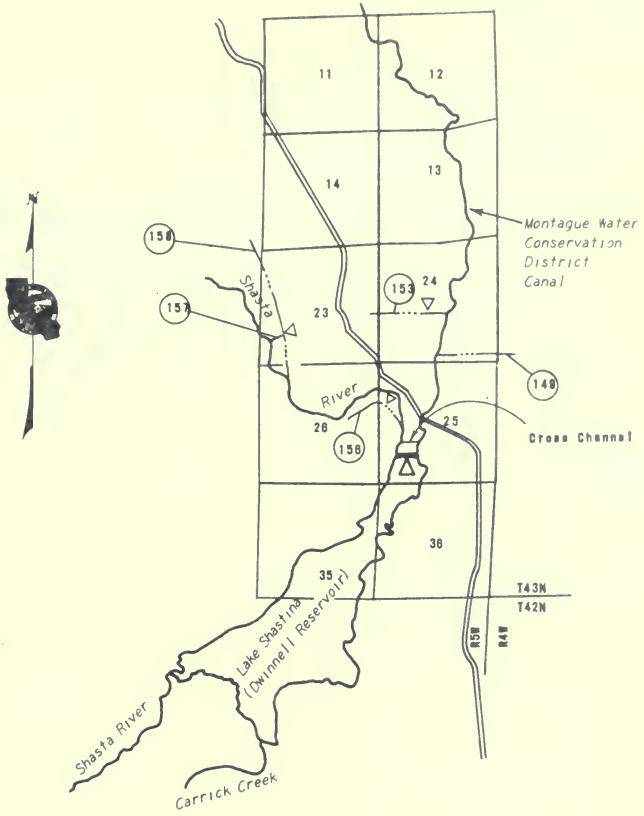
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM CARRICK CREEK

SHASTA RIVER WATERMASTER SERVICE AREA

Scale
0 ½ 1


R6W
R5W
T43N
T42N
T42N
T41N
T42N
T41N
Parks Creek
YREKA DITCH
Edgewood
99
98
5
DIVERSION NUMBER
NAME
CFS
173 Pearl Clark Ditch 0.70
175 Vanderbilt Ditch 1 275
182 Duke North *
183 Park Creek Feeder 15 20
189 Duke South *
221 222 223 224 225 228 & 227 Robertson Ditch 17 50
* Allotment of 6 00 cfs in either ditch
Watermaster Installed Recorder Station
0 1 2
SCALE IN MILES
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM PARKS CREEK
SHASTA RIVER WATERMASTER SERVICE AREA



Diversion Number	Owner	Acre-Feet
148	Flying L Ranch	196-pump
153	Taylor ditch	1200
156	Seldom-Seen Ranch	924
157	Hole-in-the-Ground Ranch	596
158	Wilson	464

▽ Watermaster Installed Recorder Station

T43N ; R5W

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
SHASTA RIVER PRIOR RIGHTS
BELOW DWINNELL RESERVOIR
(Lake Shastina)

SHASTA RIVER
WATERMASTER SERVICE AREA

0 1/2 1

Diversion Number	Owner	CFS
239	Brahs et. al. Pump	7.50
240	Big Springs I.D.	30
241) 242)	E. Louie ditch	10.0

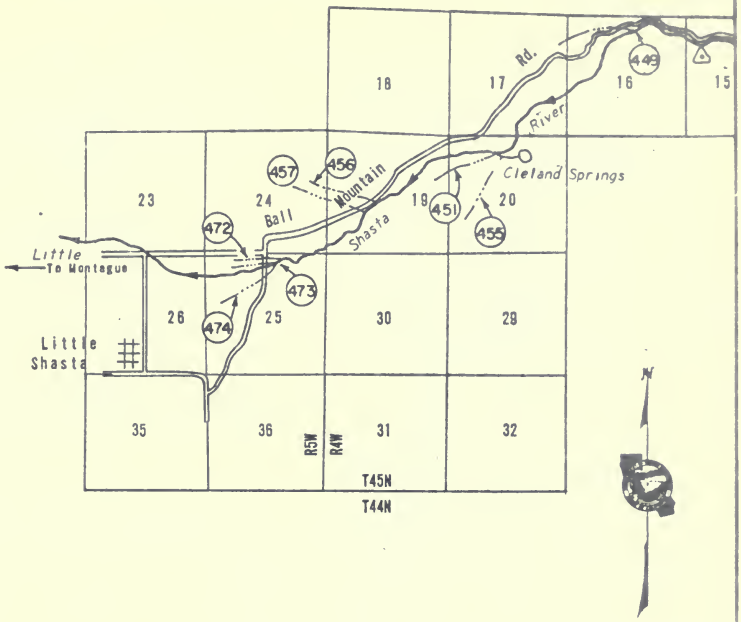
▽ Watermaster Installed Recorder Station

T43N ; R5W

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM BIG SPRINGS LAKE
SHASTA RIVER WATERMASTER SERVICE AREA

Scale
0 2000 4000



DIVERSION NUMBER	NAME	CFS
448	Harp Ditch	0.80
451	Terwilliger Ditch	1.12
455	Martin Ditch	90 00
456	Dimmick Ditch	0.12
457	S & T Ditch	6 60
472	M & L Ditch	19 80
473	BMS Ditch	7.18
474	HHP Ditch	15.000

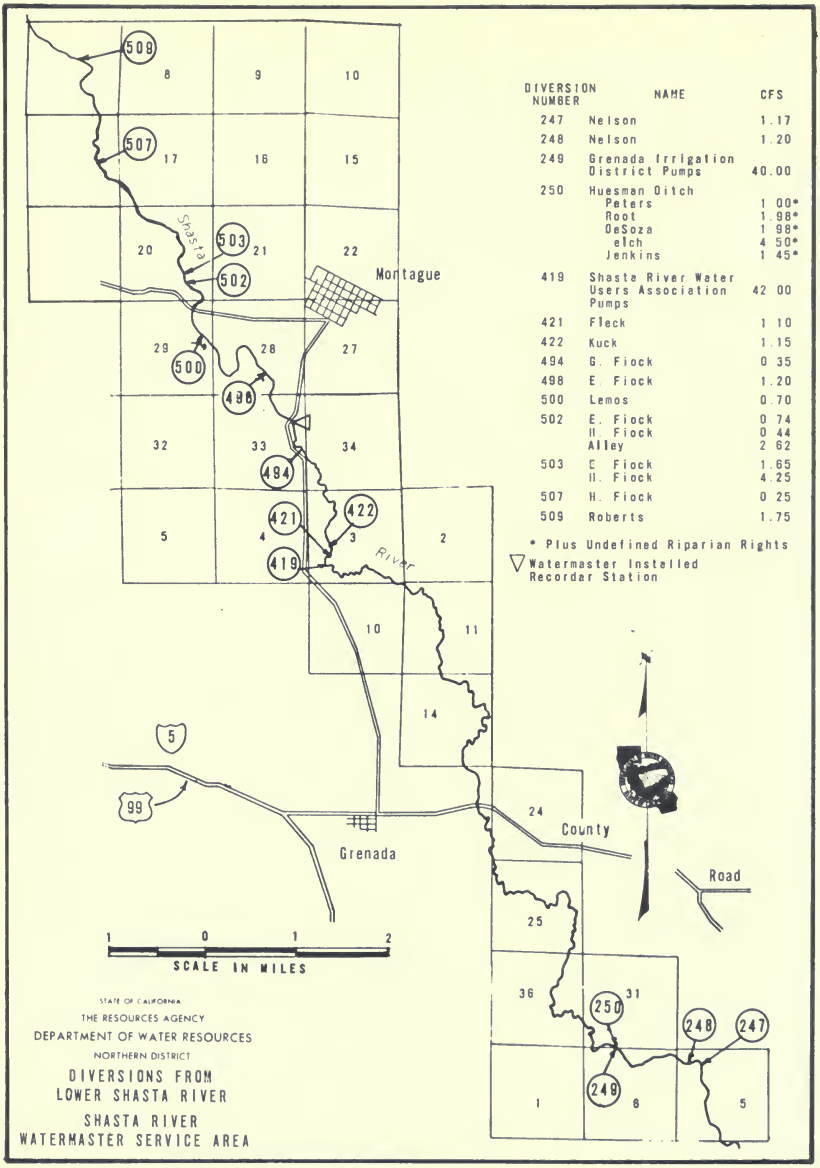
▽ Permanent Recorder Station

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
LITTLE SHASTA RIVER

SHASTA RIVER
WATERMASTER SERVICE AREA

Scale
0 1/2 1



DIVERSION NUMBER	NAME	CFS
247	Nelson	1.17
248	Nelson	1.20
249	Grenada Irrigation District Pumps	40.00
250	Huesman Ditch	
	Peters	1 00*
	Root	1.98*
	DeSoza	1 98*
	elch	4 50*
	Jenkins	1 45*
419	Shasta River Water Users Association Pumps	42 00
421	Fleck	1 10
422	Kuck	1.15
494	G. Fiock	0 35
498	E. Fiock	1.20
500	Lemos	0.70
502	E. Fiock	0 74
	H. Fiock	0 44
	Alley	2 62
503	C. Fiock	1.65
	H. Fiock	4.25
507	H. Fiock	0 25
509	Roberts	1.75

* Plus Undefined Riparian Rights

▽ Watermaster Installed Recordar Station

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM LOWER SHASTA RIVER

SHASTA RIVER WATERMASTER SERVICE AREA

South Fork Pit River Watermaster Service Area

The South Fork Pit River service area is located primarily in southeastern Modoc County, with a small portion extending into northeastern Lassen County. Figures 16 through 16d, pages 129 through 133, show the South Fork and its tributaries, with roads, etc.

The major source of water for this service area is the South Fork Pit River and its tributaries which rise on the western slopes of the Warner Mountains. The river flows in a westerly direction, entering South Fork Valley near Likely. It then flows north through the valley to its confluence with the North Fork Pit River just south of Alturas. The South Fork Pit River is joined from the east by Fitzhugh Creek near the middle of the valley and by Pine Creek near Alturas.

The major area of water use is in South Fork Valley between Likely and Alturas. South Fork Valley is about 16 miles long and 3 miles wide, with the valley floor lying at an elevation of about 4,500 feet. The valley is bounded on both sides by a rocky plateau that separates it from the surrounding mountains.

Basis of Service

The Pine Creek agreement established water rights on Pine Creek November 22, 1933, and this stream system was added to the South Fork Pit River area on January 12, 1935. Pine Creek Reservoir, a small reservoir above all diversions, was originally used for power generation. This reservoir, now a recreation site, has a small water right but is not in the service area.

A large reservoir, West Valley Reservoir, was built in 1937 to increase the supply and extend the season for irrigation in the South Fork Irrigation District. The water rights for use from West Valley Reservoir total 23,100 acre-feet.

Pine Creek water rights were established by agreement on November 22, 1933, and watermaster service began January 12, 1935. Pine Creek Reservoir, a small reservoir above all diversions, was originally used for power generation. This reservoir, now a recreation site, has a small water right but is not in the service area.

The South Fork Pit River decree and the Pine Creek agreement establish two priorities on the respective systems. There are 36 owners of decreed water rights in the service area with total allotments of 350.97 cubic feet per second.

Water Supply

The water supply for Pine Creek is derived mostly from snowmelt runoff. Therefore, runoff is usually small in the early spring, increases to a peak in May as temperatures rise, and then gradually decreases throughout the remainder of the season. Water users supplement their irrigation supplies from other sources whenever possible.

The water supply for Fitzhugh Creek consists of snowmelt runoff early in the season and supplemental water diverted from Mill Creek above Jess Valley later in the season. Surplus water from Fitzhugh Creek is diverted into the Payne and French Reservoirs through Payne-French Ditch (Diversion 136) until about June, when the diversion is adjusted to allow sufficient flow to supply downstream allotments. By July the creek has normally receded until only first priority allotments are available.

Payne Ditch (Diversion 1) is opened to import water from Mill Creek to Fitzhugh Creek when the snow has melted enough to allow access. This imported water is rediverted from North Fork Fitzhugh Creek through the Bowman Ditch to the Bowman Ranch. Return flow from

Bowman Ranch to the creek is rediverted through Diversion 136 in the Payne-French Ditch.

The water supply for the South Fork Pit River is derived primarily from snow-melt runoff, supplemented by water released from West Valley Reservoir. A number of streams, which rise at high elevations, collect at the mouth of Jess Valley to form the South Fork Pit River. West Valley Reservoir is located on West Valley Creek which enters the river below Jess Valley.

Most of the water users on the South Fork Pit River, except those in Jess Valley, are in the South Fork Irrigation District. The district stores water in West Valley Reservoir, which has a capacity of 22,240 acre-feet, and releases it to the South Fork Pit River as a supplemental supply when the natural flow becomes insufficient to meet demands. This usually occurs during the middle of June. Reservoir releases, together with the natural flow, are distributed by the watermaster in cooperation with the board of directors of the irrigation district. Except for extremely dry years, natural flow, combined with stored water, is sufficient to supply all demands for water on the South Fork Pit River throughout the irrigation season.

Records of the daily mean discharge of the several stream gaging stations in the area are presented in Tables 39 through 42, pages 127 and 128.

Method of Distribution

Irrigation of the lands along tributary streams is accomplished by flooding through use of small lateral ditches. The water is distributed on a continuous-flow basis to each user through gravity-flow diversion systems. In some cases, rotation is practiced among several users.

Most irrigation in the South Fork Pit River area is by the check and border method. The lands receive water essentially on demand by supplementing natural flow with releases from West Valley Reservoir. However, irrigation must be coordinated between the various ranches to eliminate large peak demands from the reservoir and to use the return flow as much as possible. Actual distribution varies each year as there is no specific irrigation schedule in use.

Distribution to the South Fork Pit River users is carried out on an equal and correlative basis in accordance with the water requirements for each ranch. This method of operation was made possible by construction of West Valley Reservoir in 1937.

1973 Distribution

Watermaster service began April 1 and continued until September 30. John M. Miller, Water Resources Technician II, was watermaster April 1 through May 31. The watermaster from June 1 through September 30 was L. L. Bates, Water Resources Engineering Associate.

The water supply for the 1973 irrigation season was near average.

Pine Creek. Very close regulation was required throughout the season. On April 1, Pine Creek was flowing at 100 percent of first priority allotments. Flow increased until mid-May, satisfying second priorities. The flow then receded gradually until only 50 percent of the first priorities could be met.

Fitzhugh Creek. Regulation began in April when the Bowman and Yankee Jim Ditches were opened. At the beginning both first and second priorities were served. The flow decreased steadily until only first priorities were available on June 25.

South Fork Pit River. The natural flow and West Valley Reservoir spill were sufficient to supply demands for April and May. Water was released from June 13 until September 26 in amounts required by the lower users. The maximum storage was approximately 24,000 acre-feet on May 15, and 4,900 acre-feet remained in storage at the end of September.

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 39

SOUTH FORK PIT RIVER NEAR LIKELY

Day	March	April	May	June	July	August	September	Day
1	63	81	180	270	84	152	98	1
2	60	70	160	245	88	148	98	2
3	47	69	164	230	104	148	100	3
4	44	53	169	217	102	140	100	4
5	43	52	165	198	89	144	97	5
6	44	57	145	178	97	144	98	6
7	40	56	150	161	95	146	97	7
8	40	53	174	148	83	144	98	8
9	39	57	195	137	82	150	98	9
10	44	63	217	126	79	163	97	10
11	63	66	238	122	76	158	97	11
12	56	76	298	114	82	158	97	12
13	52	89	365	119	82	159	98	13
14	47	119	442	124	77	159	97	14
15	56	121	484	122	90	167	95	15
16	72	95	510	122	117	178	94	16
17	58	111	533	112	115	176	95	17
18	46	95	515	102	127	175	95	18
19	42	84	515	89	159	173	95	19
20	49	70	488	79	154	171	90	20
21	60	66	454	70	152	171	65	21
22	72	69	398	69	152	173	61	22
23	58	80	359	58	156	171	82	23
24	48	92	342	63	158	173	67	24
25	45	111	418	84	158	175	74	25
26	44	148	402	108	154	176	49	26
27	44	174	347	97	154	154	25	27
28	47	188	309	98	154	109	22	28
29	47	197	284	94	150	107	20	29
30	54	189	261	88	150	100	20	30
31	66		265		148	100		31
Mean	51.3	94.4	321	128	118	154	80.0	Mean
Runoff In Acre-Feet	3150	5620	19720	7610	7280	9460	4760	Runoff In Acre-Feet

TABLE 40

WEST VALLEY CREEK BELOW WEST VALLEY RESERVOIR

Day	March	April	May	June	July	August	September	Day
1				83	48	134	90	1
2				80	48	140	88	2
3				77	48	140	86	3
4				74	48	134	86	4
5				70	47	134	84	5
6				64	47	134	84	6
7				62	46	134	83	7
8				58	46	140	83	8
9				54	48	146	82	9
10				52	46	160	82	10
11			18*	50	46	158	82	11
12			37	50	46	158	82	12
13			55	54	46	156	82	13
14			73	56	45	156	82	14
15			92	62	82	164	82	15
16			110	81	70	172	82	16
17			110	55	70	172	80	17
18			112	51	104	172	80	18
19			112	49	142	172	80	19
20			108	48	141	172	54	20
21			102	48	140	170	38	21
22			92	47	134	170	36	22
23			88	44	134	170	36	23
24			84	41	134	170	38	24
25			91	48	134	170	33	25
26			88	50	134	188	16**	26
27			84	49	140	134		27
28			82	49	140	92		28
29			82	48	134	92		29
30			81	48	140	92		30
31			83		140	90		31
Mean			85.0	58.0	88.6	147	70.3	Mean
Runoff In Acre-Feet			3540	3330	5450	9060	3820	Runoff In Acre-Feet

* Beginning of Record
** End of Releases

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 41

FITZHUGH CREEK BELOW DIVERSION NO. 137

Day	March	April	May	June	July	August	September	Day
1				8.0*	1.7	2.5	1.3	1
2				7.0	1.9	2.3	1.2	2
3				6.0	1.9	2.5	1.1	3
4				5.5	1.9	2.3	1.1	4
5				5.5	1.9	2.0	1.2	5
6				5.3	2.0	1.7	1.0	6
7				5.0	2.0	2.6	1.0	7
8				4.9	1.9	2.6	1.2	8
9				4.9	2.1	1.9	1.2	9
10				4.9	2.3	2.3	1.4	10
11				4.6	2.1	2.1	1.4	11
12				4.4	2.6	1.7	1.1	12
13				4.6	3.2	2.0	1.3	13
14				4.6	3.0	1.7	1.3	14
15				4.9	2.7	1.5	1.1	15
16				4.4	2.5	1.4	1.5	16
17				4.6	2.1	1.4	1.7	17
18				4.6	1.9	1.4	1.2	18
19				4.9	1.5	1.4	1.5	19
20				4.4	1.4	1.4	4.0	20
21				4.0	1.5	1.4	3.0	21
22				4.0	1.5	1.4	2.3	22
23				4.0	1.5	1.5	2.7	23
24				4.4	1.4	1.5	4.2	24
25				4.0	1.4	1.4	5.6	25
26				3.9	1.4	1.4	3.3	26
27				3.0	1.5	1.4	3.3	27
28				2.6	1.4	1.4	3.1	28
29				2.5	1.3	1.4	3.0	29
30				2.0	2.0	1.3	2.7	30
31					1.9	1.3		31
Mean				4.6	1.9	1.7	2.0	Mean
Runoff In Acre-Feet				273	118	107	121	Runoff In Acre-Feet

* Beginning of Record

TABLE 42

PINE CREEK NEAR ALTURAS

Day	March	April	May	June	July	August	September	Day
1	16	19	32	57	22	17	13	1
2	15	30	33	56	21	16	13	2
3	15	26	33	54	20	16	13	3
4	15	19	36	51	20	16	13	4
5	14	18	35	48	19	16	13	5
6	15	19	35	46	19	16	13	6
7	15	19	37	45	19	16	12	7
8	14	19	41	43	19	16	12	8
9	14	20	44	43	18	16	12	9
10	17	21	45	43	18	15	12	10
11	31	22	47	43	18	15	12	11
12	27	24	50	42	18	15	12	12
13	22	25	58	41	17	15	12	13
14	20	31	67	40	17	15	12	14
15	27	34	74	38	17	14	12	15
16	29	28	89	37	17	14	12	16
17	21	35	96	36	18	14	12	17
18	18	27	103	34	18	14	12	18
19	16	23	109	33	17	14	12	19
20	16	21	107	31	17	14	14	20
21	16	20	104	30	18	14	12	21
22	17	21	94	29	18	14	12	22
23	16	22	84	28	17	14	13	23
24	15	24	81	27	17	14	14	24
25	15	26	81	26	17	14	13	25
26	16	30	71	25	16	14	12	26
27	16	34	67	24	14	14	12	27
28	16	35	61	23	14	14	12	28
29	15	34	56	23	15	13	11	29
30	17	33	58	22	16	13	11	30
31	21		58		16	13		31
Mean	18.0	25.3	64.1	37.3	17.7	14.7	12.3	Mean
Runoff In Acre-Feet	1105	1505	3939	2218	1085	902	734	Runoff In Acre-Feet

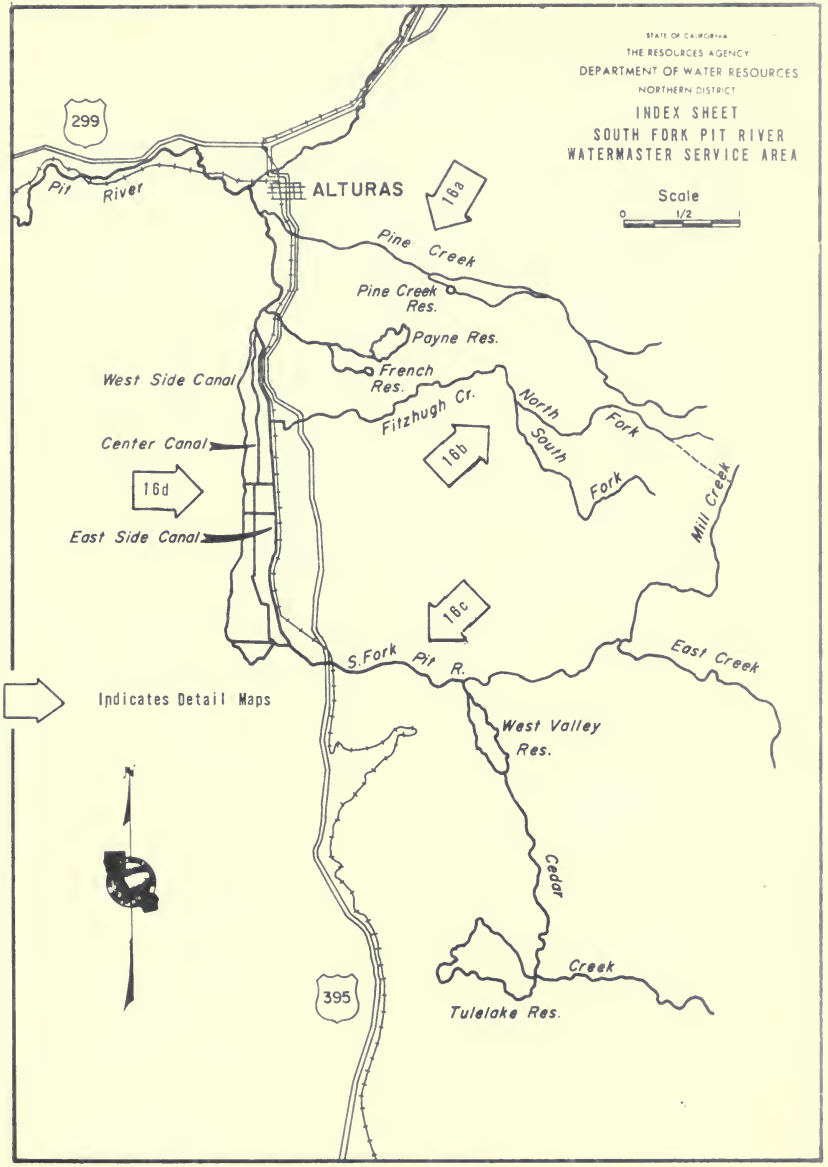
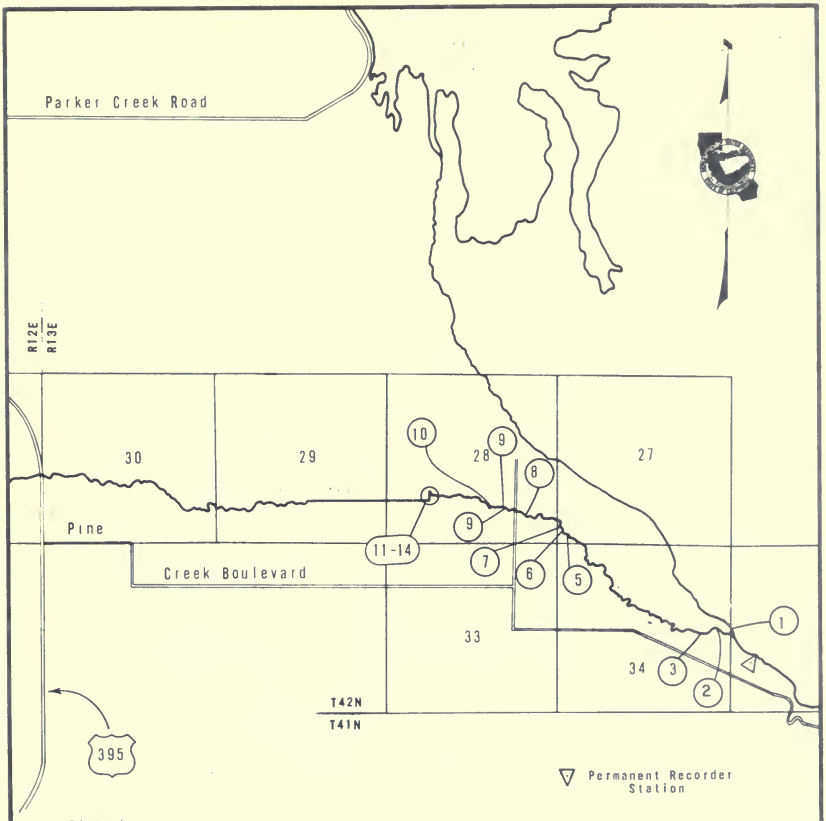

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
INDEX SHEET
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA
Scale
0 1/2 1
299
Pit River
ALTURAS
16a
Pine Creek
Pine Creek Res.
Payne Res.
French Res.
West Side Canal
Fitzhugh Cr.
North Fork
South Fork
Mill Creek
Center Canal
16b
16d
East Side Canal
16c
S. Fork Pit R.
East Creek
Indicates Detail Maps
West Valley Res.
Cedar Creek
395
Tulelake Res.

Figure 16a



Diversion Number		
1	Rice	3.00
	Stevens	3.35
	Wall	0.10
	Quinn	0.70
	Sullivan	0.70
	Ebbe	0.70
2,3,6, 7,8,9	Rice	4.85
5	Weber Bros.	8.17
	Younger	4.42
	Swanson	1.37
10		3.6
11-14	Swanson	3.04

Note: Pine Creek
1. Channel capacity below No. 5 is about 20 cfs.
2. Surpluss Pine Creek flow is diverted into Oorris Reservoir.

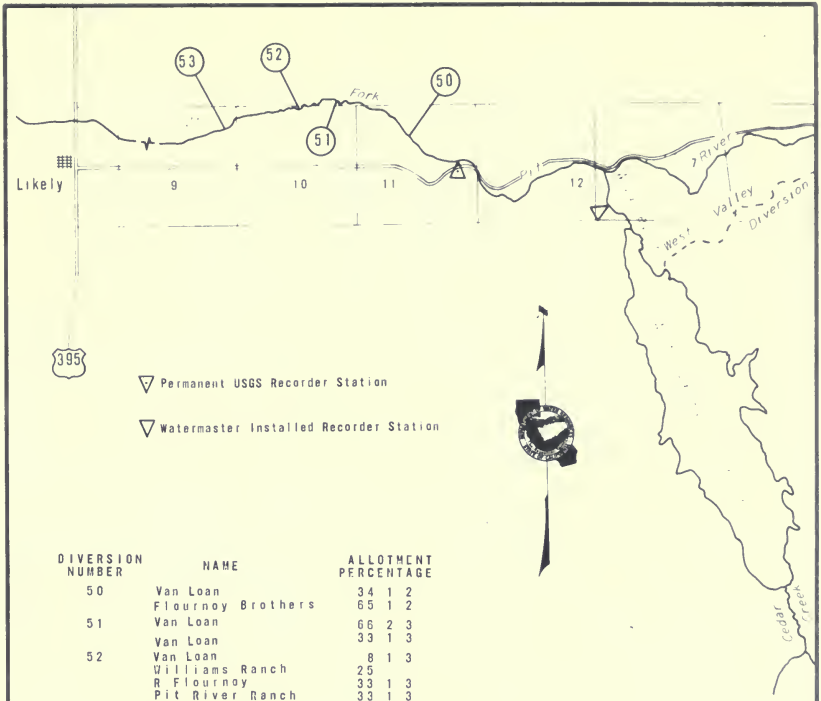
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM PINE CREEK

SOUTH FORK PIT RIVER WATERMASTER SERVICE AREA

Scale

R15E
R14E
R14E
R13E
R13E
R12E
T41N
T40N
T41N
T40N
Fitzhugh Creek
North Fork
South Fork
Fitzhugh Creek
Payne Reservoir
Little Juniper Reservoir
East Side Canal
Watermaster Installed Recorder Station
Diversion Number
Owner
CFS
1 Jobe 2.34
124 Jobe 0.80 plus imported water
125 Swanson 1.60 from Mill Creek
126, 127 Weber Bros. 0.50
128-131 Cantrall 1.20
132-135 Weber Bros., Swanson 0.70
136 Massee *
137-141 Bell 5.00
142 Pit River Ranch 5.40
* Surplus water plus water from Gorman Drain due to imported water from Mill Creek
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM FITZHUGH CREEK
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA
Scale
0 1 2



DIVERSION NUMBER	NAME	ALLOTMENT PERCENTAGE
50	Van Loan	34 1 2
	Flournoy Brothers	65 1 2
51	Van Loan	66 2 3
	Van Loan	33 1 3
52	Van Loan	8 1 3
	Williams Ranch	25
	R Flournoy	33 1 3
	Pit River Ranch	33 1 3
53	W. Flournoy	33 1 3
	K. Van Loan	66 2 3

NOTE: West Valley Reservoir maximum storage 23,100 acre-feet

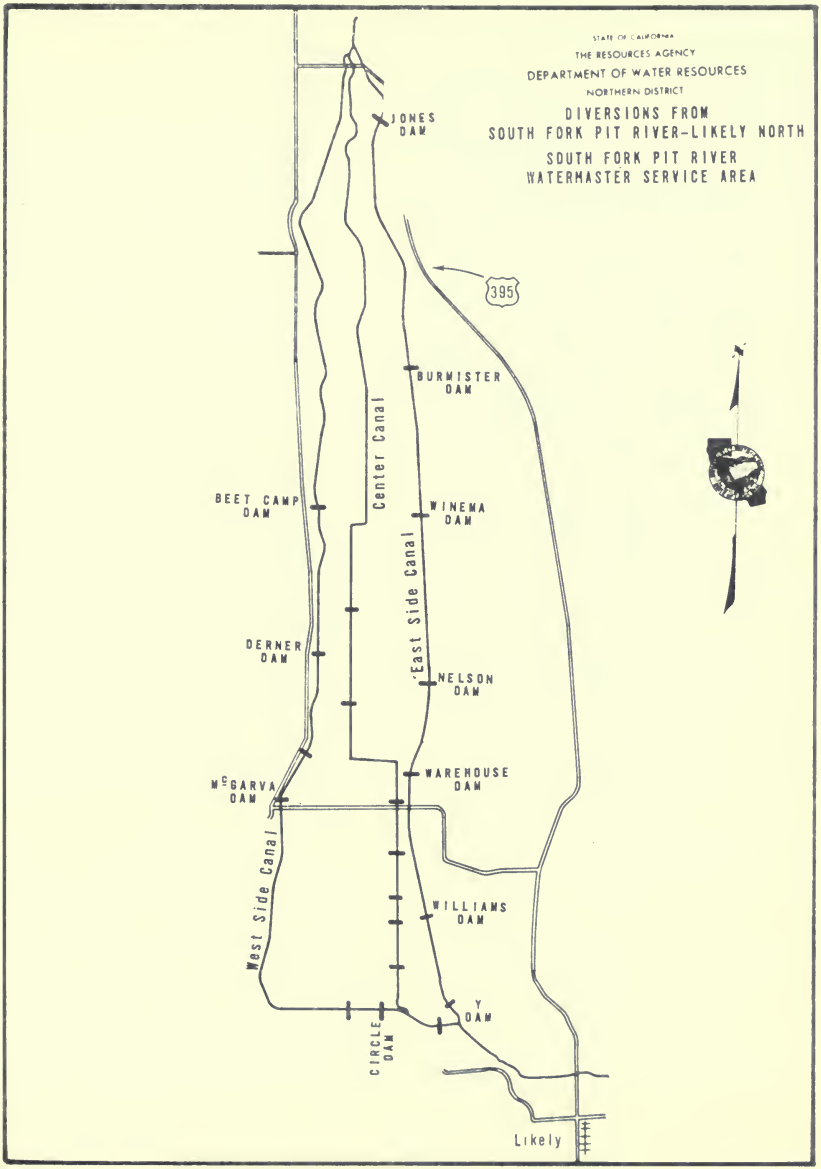
Stored water is released to supplement natural flow of South Fork Pit River. This makes decree allotments relatively unimportant

Above percentages refer only to available water supply in respective ditches

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
SOUTH FORK PIT RIVER-LIKELY EAST
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA

Scale
0 ½ 1


STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
SOUTH FORK PIT RIVER-LIKELY NORTH
SOUTH FORK PIT RIVER
WATERMASTER SERVICE AREA
JONES DAM
395
BURMISTER DAM
Center Canal
BEET CAMP DAM
WINEMA DAM
East Side Canal
DERNER DAM
NELSON DAM
McGARVA DAM
WAREHOUSE DAM
West Side Canal
WILLIAMS DAM
Y DAM
CIRCLE DAM
Likely

Surprise Valley Watermaster Service Area

The Surprise Valley service area is situated in extreme eastern Modoc County, east of the Warner Mountains. Figure 17, page 145, shows the service area, the streams serving it, and the towns and roads of the valley.

Ten individual stream systems rising on the eastern slope of the Warner Mountains supply water to the area. These streams are fed by snowmelt runoff and traverse a fast, precipitous course down the eastern slope of the Warner Mountains to the valley floor where numerous scattered diversion ditches convey water to the irrigated lands.

Basis of Service

The Surprise Valley watermaster service area was created January 10, 1939, including Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, and Emerson Creeks, all of which previously had watermaster service individually. Service was started on Eagle Creek at that time. Bidwell Creek was added to the service area March 16, 1960. Each of the 10 stream systems are under separate decrees. There are 171 owners of decreed water rights in the service area with their rights totaling 313.75 cubic feet per second. See Table 43, page 136, for specific data regarding the decrees and water rights on the individual creeks.

Water Supply

The water supply is derived almost entirely from snowmelt runoff, with only minor spring-fed flows occurring in the latter part of the season. Due to the steep eastern slope of the Warner Mountains, there are no known economically justified storage sites on the service area streams. Because of the lack of such regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. An extreme diurnal temperature variation causes extensive variation in snowmelt runoff. This problem is further aggravated by the relatively short, steep drainage area. In addition, occasional summer thundershowers may cause a creek to discharge a flow of mammoth proportions for several hours. These flashes are apt to cause considerable damage in the form of washouts and debris deposition and are of such short duration that no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 44 through 54, pages 139 through 144.

Method of Distribution

The continuous-flow method of distribution is employed on most creeks; however, in a few instances the available water supply is rotated among the users in accordance with either decree schedules or by mutual agreement.

Alfalfa and meadow hay, the major crops grown in the valley, are irrigated in most instances by wild flooding, although some lands depend upon subsurface irrigation. Also, sprinkler irrigation with surface water is a recent trend. A few of these systems work by gravity, but most employ pumps with the surface water supplemented by deep wells. Many additional acres have been put into production during the past few years through the use of deep wells. Only surface water supplies are under state watermaster service.

To facilitate distribution of irrigation water, construction of permanent diversion dams, headgates, and measuring devices has been stressed during recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they do provide significant assistance in solving water

TABLE 43

DECREES AND RELATED DATA – SURPRISE VALLEY STREAMS

Creek	Modoc County Superior Court Decree No.	Date	Type[a]	Service Area Created	No. of Water Right Owners	Total Cubic Feet Per Second	Remarks
Bidwell	6420	1-13-60	S	3-16-60[b]	46	63.74	(Schedule 3) 3 priorities March 15-July 19 (Schedule 4) 5 priorities July 10-Sept. 30 If no water passing Div. No. 23 Sept. 30-March 14, 1st priority provisions of Schedule 4 apply.
Mill	3024	12-19-31	CR	12-30-31	38	37.13	1 priority on Brown Cr., tributary to Rutherford Cr., 7 priorities on Rutherford Cr., tributo Mill Cr., 4 priorities on Mill Cr., 1st & 2nd for year-round use, 3rd & 4th April through September.
Soldier	2045	11-28-28	CR	9-11-29	13 4[c]	33.50 4.37	Starting March 19 each year, lower users receive water for 4 13-day periods alternating with upper users who receive water for 4 10-day periods, ending June 19. 7 priorities during lower users periods, 8 during upper users periods and 12 for rest of the year. Approp. License 1566, 1613, 1648, and 1850.
Pine	3391	12- 7-36	CR	1-13-37	5 1[c]	d/ 0.08	One full rotation totalling 693 AF. Rotation continues until flow decreases to 4 cfs, then all water goes to Cal-Vada Ranch until flow decreases to 1.60 cfs, then all water goes to the R. Bordwell Ranch.
Cedar	1206 2343 d/	5-22-01 2-15-23	CA CA	9-11-29	12	28.90[d]	Water rights established by these two decrees and an agreement signed by all users. No. 1206 set 1st & 2nd priorities; No. 2443 3rd priority & agreement the 4th. 28.90 cfs includes 5.00 cfs imported from Thoms Cr. on west slope of Warner Mountains.
Deep	3101	1-25-34	CR	12-29-34	11	29.37	Schedule 2 establishes 5 priorities, year-round.
Owl	2410	5-29-29	CA	9-11-29	8 1[c]	41.70	21 priorities; all year-round but 8th, under which each of 3 owners receives his allotment for an 8-day period. Approp. License No. 2842, 0.54 cfs.
Rader	3626	6- 4-37	CR	6-12-37	6	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6 & 7 have seasonal limitations.
Eagle	2304 3284	4- 5-26 11- 5-37	CA CR	1-10-39	36	30.57	Decree No. 3284 added rights in all priority classes, & established 4 classes. 4.50 cfs right of Bettord Corp. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 16 to October 14 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVII & XVIII, for use April 15 to October 1.
Emerson	2840	3-25-30	CR	4-11-30	10	24.65	4 priorities, 1st is for year-round use, others April 1 to September 30.

a/ S-Statutory, CR-Court Reference, CA-Court Adjudication

b/ Added to existing Surprise Valley service area.

c/ Appropriative rights junior to the decreed rights.

d/ See remarks.

measurement and distribution problems. The individual streams and locations of the diversions are shown on Figures 17 through 17j, pages 145 through 156.

Although the Owl Creek Flood Control and Water Conservation District did not become official until August 7, 1961, the district's diversion and distribution project was completed in February, 1961. The project reduced the number of diversions from 17 to 2 and the number of ditches from 17 to 8. This makes distribution easier and more equitable. The users say that they receive twice as much water as they did before the project. It is possible to divert and distribute 80 cubic feet per second in the lower seven ditches.

1973 Distribution

Watermaster service began in the Surprise Valley service area on March 19 and continued through September 30. William E. Gill, Jr., Water Resources Technician II, was the watermaster.

The 1973 irrigation season was the driest in several years. The April snow surveys indicated above-average water content in the snowpack; however, lack of precipitation and hot, dry winds depleted the water supply rapidly. Most streams reached their maximum flow about mid-May, then receded rapidly.

Crop yields were down in 1973, particularly on ranches where surface water is not supplemented by ground water. Ranches utilizing ground water experienced near-normal yields. Some acreage is being reclaimed due to the rapid recession of the Alkali Lakes during the hot, dry summer.

Bidwell Creek. Total stream runoff available to Bidwell Creek users during the period April 1 through September 30 was 11,120 acre-feet, or approximately 104 percent of normal. Charles H. Holmes, North Fork Pit River watermaster, served as watermaster on Bidwell Creek until July 1. July 1 streamflow was adequate to supply 24 percent of the first priority allotments on Schedule 3. When Schedule 4 became effective July 10, streamflow was adequate to supply the first priority and 45 percent of the second priority. By August 15 only first priority water was available. Streamflow remained at this level until rains fell in late September.

Mill Creek. Total stream runoff available to Mill Creek users during the period April 1 through September 30 was 2,850 acre-feet, or approximately 56 percent of normal. Streamflow was erratic during April. All four priorities were filled from May 12 through May 25. After May 25, streamflow receded steadily and from late July until the end of the season only a portion of the first priority allotments was filled. A headgate and spillback structure was constructed for the Little Branch Diversion after the irrigation season.

Soldier Creek. Total stream runoff available to Soldier Creek users from March 19 through September 30 was 2,920 acre-feet, or approximately 79 percent of normal. The lower users were not prepared to use any water during their first rotation period. Also, streamflow was low during this period. Streamflow increased during early April and was adequate to supply all decreed allotments from April 10 through May 19. By the end of the irrigation rotation season, June 19, only a portion of the second priority allotments was filled. During late July, August, and most of September, streamflow was only enough to supply a portion of the first priority allotments.

Pine Creek. Total stream runoff available to Pine Creek users during the period March 20 through September 30 was 1,260 acre-feet, or 91 percent of normal. Pine Creek was operated in accordance with the rotation schedule established by the court decree. On May 17 the streamflow receded to 4 cubic feet per second, ending the rotation, and was diverted to the Bordwell Ranch

via the Cressler Ditch until June 25 when the water would no longer reach the place of use. Pine Creek was dry for the remainder of the season.

Cedar Creek. Total stream runoff available to Cedar Creek users during the period April 1 through September 30 was 3,126 acre-feet or approximately 120 percent of normal. Early streamflow was adequate to supply demands; however, by mid-May only the first priority and 50 percent of the second priority could be satisfied. Warrens and Wiley supplemented their allotment with water imported from Thoms Creek. From June 8 through the remainder of the season only a portion of the first priority could be satisfied. A headgate and spillback structure was constructed for the Warrens-Wiley diversion.

Deep Creek. Total stream runoff available to Deep Creek users during the period April 1 through September 30 was 2,850 acre-feet, or approximately 76 percent of normal.

The streamflow of North Deep Creek was diverted through the Company Ditch throughout the season. There are only first priority rights here. These were satisfied from mid-April to the latter part of May. By the end of May the stream had receded to 45 percent of this priority. It continued to recede throughout the season with less than 1 cfs available from about mid-June through September.

South Deep Creek was able to supply a portion of the third priorities from about mid-April to about mid-May. Thereafter, streamflow receded steadily. By the end of May it supplied 20 percent of second priority (6.6 cfs), but from July 3 through September less than 1 cfs was available.

Owl Creek. Total stream runoff available to Owl Creek users during the period April 1 through September 30 was 6,730 acre-feet, or approximately 102 percent of normal. The supply was adequate to fill all 21 priorities from May 11 through June 2. The streamflow diminished rapidly during June and July. Flow was adequate to supply the first special eighth priority from July 8 through July 15; however, by July 24 water was not available for the second and third special 8-day eighth priority rights. From mid-August until late September, the supply was adequate to partially satisfy the fourth priority rights.

Rader Creek. Total stream runoff available to Rader Creek users during the period April 1 through September 30 was 2,830 acre-feet, or approximately 79 percent of normal. From late May through early June, Rader Creek flow was adequate to supply all six priorities. The flow receded steadily, and by late July only first priority water was available. During August and September decreasing amounts of first priority water were available.

Plans and cost estimates are being prepared for replacement of Diversions 3, 4, 5, 6, and 7, with a dam in the mouth of the canyon and possibly a pipeline to serve the users.

Eagle Creek. Eagle Creek supplied all four priorities for a short period in May. By early July only first and second priority water was available. Flows continued to recede and by mid-September only one-half of the first priority could be satisfied. Plans and cost estimates are being prepared for a "town users" distribution system.

Emerson Creek. Total stream runoff available to Emerson Creek users during the period April 1 through September 30 was 4,160 acre-feet, or approximately 112 percent of normal. Water supply was sufficient to satisfy all four priorities from late April through most of May. Streamflows receded steadily until late July, then stabilized with first priority and a small amount of second priority water available for the remainder of the season.

Special Occurrences

The Department's stream gaging station on Eagle Creek was not functioning during the 1973 irrigation season. A new dam, headgate, and measuring structure were constructed on the Eagle Creek Diversion 17 in the fall (after the irrigation season).

SURPRISE VALLEY WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 44

BIDWELL CREEK NEAR FORT BIDWELL

Day	March	April	May	June	July	August	September	Day
1	11	13	72	57	12	5.2	4.2	1
2	11	12	71	51	12	5.1	4.2	2
3	11	12	74	47	11	5.0	4.2	3
4	11	14	75	41	11	4.9	4.1	4
5	10	17	68	37	11	4.8	4.0	5
6	10	22	64	35	10	4.8	4.0	6
7	9.9	24	65	33	10	4.7	4.0	7
8	9.9	23	70	32	9.8	4.7	4.0	8
9	10	27	75	30	9.5	4.7	4.1	9
10	13	32	74	28	9.2	4.5	4.2	10
11	13	39	73	26	8.9	4.5	4.1	11
12	12	45	78	25	8.7	4.4	4.0	12
13	12	45	102	24	8.5	4.3	4.0	13
14	11	38	134	23	8.4	4.3	4.0	14
15	11	34	141	22	8.2	4.2	4.0	15
16	11	34	143	21	7.7	4.1	4.0	16
17	11	38	143	20	7.6	4.2	4.0	17
18	11	34	145	19	7.4	4.2	4.0	18
19	11	31	134	18	7.5	4.1	4.2	19
20	11	29	115	17	7.5	4.1	5.4	20
21	11	28	98	17	7.4	4.0	5.1	21
22	11	32	89	17	7.1	4.1	4.8	22
23	11	40	86	16	6.9	4.1	5.3	23
24	11	48	107	15	6.5	4.2	6.8	24
25	13	57	98	15	6.2	4.3	6.8	25
26	14	69	86	14	6.0	4.3	5.6	26
27	14	82	74	14	5.9	4.2	5.2	27
28	14	88	67	13	5.9	4.2	5.0	28
29	13	79	63	13	5.7	4.1	4.8	29
30	13	74	61	13	5.5	4.1	4.7	30
31	13		61		5.4	4.2		31
Mean	11.6	38.7	90.5	29.1	8.2	4.4	4.6	Mean
Runoff In Acre-Feet	712	2301	5566	1494	505	271	271	Runoff In Acre-Feet

SURPRISE VALLEY WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 45

MILL CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		2.2*	20	16	4.2	1.7	1.1	1
2		2.1	20	15	3.9	1.7	1.1	2
3		2.1	21	13	3.7	1.7	1.1	3
4		2.2	20	12	3.7	1.7	1.1	4
5		3.3	18	12	3.5	1.7	1.0	5
6		4.4	18	12	3.5	1.5	1.0	6
7		3.5	20	11	3.5	1.5	1.0E	7
8		3.7	21	10	3.3	1.4	1.0E	8
9		5.9	21	9.6	3.3	1.4	1.0E	9
10		8.8	21	9.2	3.1	1.4	1.0E	10
11		11	22	8.8	3.1	1.4	1.0	11
12		13	24	8.4	2.9	1.4	1.0	12
13		13	27	8.0	2.7	1.3	1.0	13
14		11	30	7.6	2.5	1.3	1.0	14
15		9.6	33	7.3	2.5	1.3	1.0	15
16		9.6	34	6.9	2.5	1.3	0.9	16
17		11	34	6.6	2.5	1.3	0.9	17
18		9.2	34	6.2	2.2	1.3	0.9	18
19		8.0	33	5.9	2.2	1.3	1.1	19
20		7.3	30	5.6	2.2	1.3	1.7	20
21		6.6	27	5.3	2.2	1.3	1.3E	21
22		8.0	25	5.0	2.1	1.3	1.1E	22
23		10	23	4.7	2.0	1.3	1.3E	23
24		12	27	4.7	1.8	1.4	1.1E	24
25		14	26	4.7	1.8	1.4	1.1E	25
26		19	22	4.7	1.8	1.4	1.0E	26
27		24	20	4.4	1.8	1.3	1.0E	27
28		26	19	4.4	1.8	1.3	1.0E	28
29		23	18	4.4	1.7	1.3	1.0E	29
30		21	18	4.2	1.7	1.1	1.0E	30
31			17		1.7	1.1		31
Mean		10.2	24.0	7.9	2.6	1.4	1.1E	Mean
Runoff In Acre-Feet		604	1470	471	161	85	63E	Runoff In Acre-Feet

* Beginning of Record
E Estimated

TABLE 46

SOLDIER CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		5.4	23	7.7	2.1	1.5	1.5	1
2		5.8	23	7.2	1.9	1.7	1.5	2
3		5.8	22	6.6	1.7	1.7	1.4	3
4		7.0	21	6.2	2.6	1.7	1.3	4
5		13	20	5.7	2.6	1.6	1.2	5
6		17	21	5.2	2.6	1.6	1.2	6
7		16	22	4.8	2.6	1.6	1.3	7
8		17	23	4.6	2.6	1.6	1.3	8
9		21	23	4.6	2.5	1.7	1.2	9
10		23	23	4.4	2.4	1.7	1.2	10
11		25	23	4.2	2.4	1.7	1.1	11
12		25	24	4.2	2.2	1.7	1.1	12
13		20	25	4.0	2.2	1.7	1.2	13
14		18	25	4.0	2.1	1.7	1.3	14
15		17	25	3.8	2.0	1.6	1.3	15
16		18	25	3.8	2.0	1.5	1.3	16
17		20	25	3.8	3.0	1.5	1.3	17
18		15	24	3.6	2.4	1.5	1.3	18
19	3.8*	14	23	3.4	2.2	2.5	1.3	19
20	3.8	13	21	3.1	2.4	1.5	1.6	20
21	3.0	13	19	2.9	2.2	1.5	1.3	21
22	2.3	16	18	2.9	2.1	1.5	1.3	22
23	2.3	19	17	2.9	2.0	1.5	2.6	23
24	4.2	21	17	2.9	1.9	1.6	3.0	24
25	5.4	22	13	2.9	1.7	1.6	2.1	25
26	7.0	25	11	2.6	1.6	1.7	1.6	26
27	7.4	27	9.9	2.3	1.5	1.5	1.5	27
28	6.6	26	9.3	2.3	1.4	1.4	1.4	28
29	6.2	24	8.8	2.3	1.3	1.3	1.4E	29
30	5.8	22	8.6	2.1	1.3	1.3	1.3E	30
31	5.8		8.3		1.3	1.4		31
Mean	4.9	17.7	19.4	4.0	2.1	1.6	1.4E	Mean
Runoff In Acre-Feet	126	1050	1190	240	129	96	86E	Runoff In Acre-Feet

* Beginning of Record
E Estimated

SURPRISE VALLEY WATERMASTER SERVICE AREA

1973 Daily Mean Discharge In Cubic Feet Per Second

TABLE 47

PINE CREEK AT DIVISION OF NORTH AND SOUTH CHANNELS

Day	March	April	May	June	July	August	September	Day
1		4.2	12	1.2				1
2		3.1	12	1.1				2
3		3.1	11	1.0				3
4		4.6	11	0.9				4
5		8.3	13	0.9				5
6		12	12	0.8				6
7		11	12	0.7				7
8		11	12	0.7				8
9		14	9.7	0.6				9
10		15	8.7	0.6				10
11		18	8.1	0.5				11
12		22	7.9	0.5				12
13		14	7.9	0.4				13
14		13	7.1	0.4				14
15		11	6.4	0.4				15
16		12	5.3	0.4				16
17		15	4.0	0.3				17
18		12	3.3	0.3				18
19		11	2.6	0.3				19
20	2.7*	9.1	2.1	0.2				20
21	2.6	9.1	1.8	0.2				21
22	2.6	14	1.7	0.1				22
23	2.6	18	1.6	0.1**				23
24	2.9	19	1.6					24
25	3.4	21	1.5					25
26	4.8	25	1.5					26
27	5.8	25	1.4					27
28	5.2	18	1.4					28
29	4.0	14	1.3					29
30	4.3	12	1.3					30
31	4.3		1.2					31
Mean	3.8	13.3	5.9	0.5				Mean
Runoff In Acre-Feet	89	790	366	25				Runoff In Acre-Feet

* Beginning of Record
** End of Record

TABLE 48

CEDAR CREEK NEAR CEDARVILLE

Day	March	April	May	June	July	August	September	Day
1	5.3	8.8	20	6.8	1.6	0.4	0.4	1
2	5.6	9.3	19	6.0	1.5	0.4	0.4	2
3	5.8	9.5	19	5.5	1.4	0.4	0.4	3
4	5.7	10	20	5.1	1.4	0.3	0.3	4
5	5.5	13	20	4.7	1.3	0.3	0.3	5
6	5.5	17	19	4.4	1.3	0.3	0.3	6
7	5.4	17	19	4.1	1.2	0.3	0.4	7
8	5.3	18	18	3.9	1.1	0.3	0.4	8
9	5.4	21	18	3.7	1.1	0.3	0.4	9
10	11	23	17	3.6	1.0	0.3	0.4	10
11	22	24	17	3.4	0.9	0.3	0.4	11
12	21	25	17	3.2	0.9	0.3	0.4	12
13	20	24	17	3.2	0.9	0.2	0.3	13
14	19	23	17	3.3	0.8	0.2	0.3	14
15	16	22	18	3.1	0.8	0.3	0.4	15
16	17	22	17	3.0	0.7	0.2	0.4	16
17	17	25	17	3.1	0.8	0.3	0.3	17
18	18	23	17	2.9	0.8	0.3	0.3	18
19	15	22	16	2.6	0.7	0.3	0.4	19
20	14	18	14	2.4	0.6	0.2	1.1	20
21	14	18	12	2.2	0.7	0.2	0.7	21
22	13	20	11	2.1	0.7	0.2	0.5	22
23	12	21	11	2.2	0.7	0.3	1.1	23
24	11	23	14	2.1	0.6	0.3	1.1	24.
25	11	23	13	1.8	0.6	0.4	0.8	25
26	11	25	11	1.8	0.5	0.4	0.8	26
27	10	26	9.8	1.7	0.5	0.4	0.5	27
28	9.7	24	8.8	1.6	0.5	0.4	0.5	28
29	8.9	23	8.0	1.5	0.4	0.4	0.5	29
30	9.0	22	7.7	1.5	0.4	0.3	0.5	30
31	8.8		7.7		0.4	0.3		31
Mean	11.8	20.0	15.2	3.2	0.9	0.3	0.5	Mean
Runoff In Acre-Feet	710	1191	832	192	53	19	29	Runoff In Acre-Feet

SURPRISE VALLEY WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 49

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		3.3*	8.6	4.8	1.3	0.6	0.5	1
2		3.5	10	4.6	1.3	0.6	0.5	2
3		3.7	11	4.3	1.3	0.6	0.4	3
4		3.9	11	3.9	1.3	0.6	0.4	4
5		5.5	9.2	3.7	1.3	0.6	0.4	5
6		6.8	8.6	3.5	1.2	0.6	0.3	6
7		6.8	9.2	3.3	1.2	0.5	0.4	7
8		6.8	10	3.3	1.2	0.5	0.4	8
9		7.2	12	3.1	1.1	0.4	0.4	9
10		7.6	12	2.9	1.0	0.4	0.4	10
11		7.6	12	2.7	1.0	0.4	0.3	11
12		10	13	2.7	0.9	0.4	0.3	12
13		10	14	2.6	0.8	0.4	0.3	13
14		9.2	16	2.6	0.8	0.4	0.4	14
15		7.6	15	2.4	0.8	0.4	0.4	15
16		8.1	14	2.4	0.8	0.4	0.4	16
17		12	12	2.4	0.8	0.4	0.4	17
18		10	11	2.3	0.8	0.4	0.4	18
19		9.2	10	2.2	0.8	0.4	0.5	19
20		9.2E	9.6	2.1	0.8	0.4	1.0	20
21		9.2E	8.1	1.9	0.8	0.4	0.7	21
22		9.2E	7.2	1.9	0.8	0.4	0.7	22
23		9.2E	7.6	1.9	0.8	0.4	1.2	23
24		9.2E	9.2	1.8	0.7	0.4	1.3	24
25		10	8.6	1.7	0.7	0.5	0.9	25
26		12	7.6	1.6	0.7	0.5	0.7	26
27		14	6.8	1.5	0.7	0.5	0.6	27
28		12	6.1	1.5	0.7	0.4	0.6	28
29		9.6	5.8	1.4	0.6	0.4	0.5	29
30		9.0	5.5	1.4	0.6	0.4	0.5	30
31			5.5		0.6	0.5		31
Mean		8.4	9.9	2.6	0.9	0.5	0.5	Mean
Runoff In Acre-Feet		500	607	156	56	28	32	Runoff In Acre-Feet

* Beginning of Record
E Estimated

TABLE 50

SOUTH DEEP CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		5.3*	8.7	6.0	1.0	0.4	0.6	1
2		5.7	8.7	5.4	1.0	0.5	0.6	2
3		5.1	8.9	5.1	0.9	0.5	0.5	3
4		5.7	8.9	4.8	0.8	0.3	0.5	4
5		7.4	8.3	4.3	0.8	0.3	0.5	5
6		10	8.3	4.0	0.7	0.3	0.5	6
7		11	8.7	3.7	0.6	0.2	0.5	7
8		10	9.2	3.4	0.6	0.3	0.6	8
9		12	9.4	3.0	0.5	0.3	0.6	9
10		13	9.7	2.8E	0.4	0.3	0.5	10
11		13	9.7	2.7E	0.4	0.3	0.4	11
12		14	9.9	2.6	0.4	0.3	0.4	12
13		14	11	2.5	0.3	0.3	0.4	13
14		12	10	2.4	0.3	0.2	0.5	14
15		12	10	2.3	0.3	0.2	0.5	15
16		12	9.9	2.3	0.3	0.2	0.5	16
17		14	9.7	2.3	0.3	0.2	0.5	17
18		12	9.4	2.2	0.4	0.3	0.5	18
19		12	9.2	2.0	0.3	0.3	1.1	19
20		11	8.7	1.9	0.3	0.4	2.0	20
21		10	7.8	1.7	0.4	0.5	1.4	21
22		11	7.2	1.7	0.3	0.5	1.2	22
23		12	7.0	1.7	0.3	0.5	2.4	23
24		12	9.7	1.6	0.3	0.6	2.6	24
25		12	9.7	1.4	0.4	0.8	1.9	25
26		13	8.9	1.3	0.3	0.8	1.5	26
27		14	8.3	1.3	0.3	0.7	1.4	27
28		12	7.6	1.2	0.2	0.6	1.3	28
29		10	7.0	1.1	0.2	0.5	1.3E	29
30		9.4	6.8	1.0	0.2	0.5	1.2E	30
31			6.6		0.4	0.6		31
Mean		10.9	8.8	2.7E	0.4	0.4	0.9E	Mean
Runoff In Acre-Feet		648	541	158E	28	25	56E	Runoff In Acre-Feet

* Beginning of Record
E Estimated

SURPRISE VALLEY WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 51

OWL CREEK BELOW ALLEN-ARRECHE DITCH

Day	March	April	May	June	July	August	September	Day
1		3.3*	24	50	10	3.0	2.3	1
2		3.9	27	43	9.8	2.9	2.3	2
3		4.7	27	36	8.7	2.8	2.2	3
4		5.8	25	33	8.4	2.7	2.1	4
5		8.9	26	32	8.1	2.6	2.1	5
6		10	24	33	7.8	2.5	2.1	6
7		8.9	28	35	7.5	2.4	2.1	7
8		9.2	33	37	6.2	2.3	2.2	8
9		12	33	36	6.7	2.3	2.1	9
10		13	33	33	6.4	2.2	2.1	10
11		16	40	29	6.1	2.2	2.2	11
12		19	47	27	6.1	2.2	2.2	12
13		15	72	28	5.8	2.2	2.1	13
14		12	92	25	5.6	2.2	2.1	14
15		11	102	22	5.4	2.1	2.1	15
16		10	99	21	5.3	2.0	2.1	16
17		12	107	19	5.8	2.0	2.1	17
18		9.7	117	17	5.5	2.0	2.1	18
19		8.4	116	16	4.9	1.9	2.6	19
20		7.5	106	15	4.8	1.9	4.7	20
21		7.6	110	15	4.8	1.9	1.9	21
22		10	92	14	4.5	1.9	1.7	22
23		13	77	14	4.2	1.9	6.7	23
24		15	95	13	4.0	2.0	8.1	24
25		17	104	13	3.9	2.1	5.6	25
26		18	64	13	3.7	2.1	4.1	26
27		30	48	13	3.5	2.0	3.2	27
28		32	43	12	3.4	1.8	2.7	28
29		29	45	11	3.3	1.8	2.3E	29
30		23	46	11	3.2	2.0	2.2E	30
31			59		3.0	2.2		31
Mean		13.2	63.3	23.9	5.7	2.2	2.8E	Mean
Runoff In Acre-Feet		783	3890	1420	350	135	167E	Runoff In Acre-Feet

* Beginning of Record
E Estimated

TABLE 52

RADER CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1			18	19	4.9	1.7	0.5E	1
2			18	18	4.4	1.7	0.5E	2
3			18	18	4.2	1.9	0.5E	3
4			18	17	3.8	2.0	0.5E	4
5			17	16	3.8	1.9	0.5E	5
6			16	18	3.8	1.2	0.4E	6
7			18	18	3.3	0.8	0.4E	7
8			19	18	2.2	0.8E	0.4E	8
9		10*	19	18	2.2	0.8E	0.4E	9
10		11	20	17	2.2	0.8E	0.5E	10
11		14	20	17	2.8	0.7E	0.5E	11
12		16	21	18	3.8	0.7E	0.4E	12
13		13	21	18	3.4	0.7E	0.4E	13
14		12	22	14	4.0	0.7E	0.4E	14
15		12	22	13	4.0	0.7E	0.4E	15
16		11	23	11	3.8	0.6E	0.4E	16
17		11	23	10	3.3	0.6E	0.4E	17
18		11	22	9.0	2.7	0.6E	0.4E	18
19		10	22	7.6	2.9	0.6E	0.8	19
20		9.8	21	8.7	2.7	0.8E	0.6	20
21		9.8	21	6.3	2.9	0.6E	0.5	21
22		11	21	5.9	2.7	0.6E	1.5	22
23		12	21	5.7	2.2	0.6E	3.6	23
24		13	21	6.1	1.9	0.7E	5.5	24
25		14	21	6.1	2.0	0.7E	3.8	25
26		17	20	7.2	2.0	0.6E	3.3	26
27		18	19	6.5	1.7	0.6E	2.8	27
28		18	19	6.1	2.0	0.6E	2.7	28
29		18	18	6.1	1.9	0.5E	2.6E	29
30		18	19	5.9	1.7	0.5E	2.4E	30
31			20		1.7	0.5E		31
Mean		13.2	19.9	12.0	2.9	0.9E	1.3E	Mean
Runoff In Acre-Feet		574	1230	712	181	53E	75E	Runoff In Acre-Feet

* Beginning of Record
E Estimated

SURPRISE VALLEY WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 53

EAGLE CREEK AT EAGLEVILLE

Day	March	April	May	June	July	August	September	Day
1								1
2								2
3								3
4								4
5								5
6								6
7								7
8								8
9								9
10								10
11								11
12								12
13								13
14								14
15								15
16		NO RECORD AVAILABLE FOR 1973 SEASON						16
17								17
18								18
19								19
20								20
21								21
22								22
23								23
24								24
25								25
26								26
27								27
28								28
29								29
30								30
31								31
Mean								Mean
Runoff In Acre-Feet								Runoff In Acre-Feet

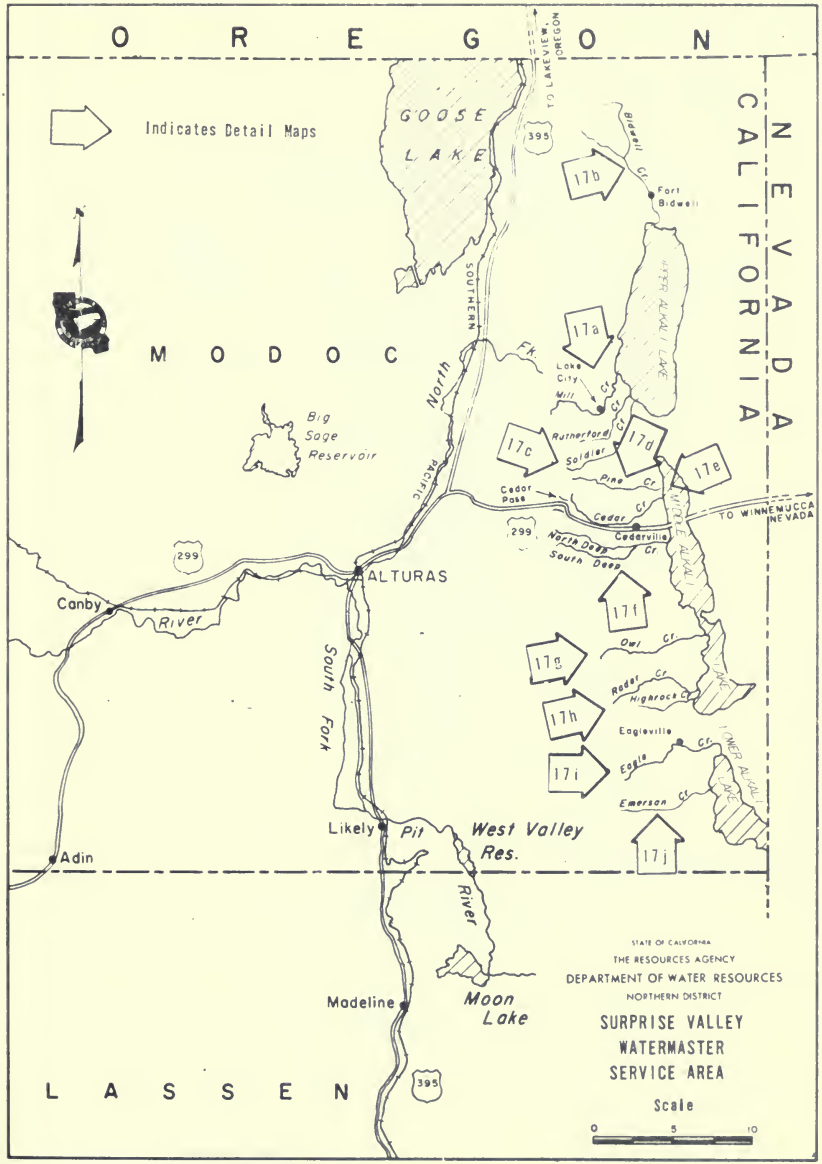
TABLE 54

EMERSON CREEK ABOVE ALL DIVERSIONS

Day	March	April	May	June	July	August	September	Day
1		6.0*	26	16	5.2	3.1	3.6	1
2		5.6	27	15	5.2	3.3	3.6	2
3		5.6	27	15	4.8	3.3	3.3	3
4		6.4	26	14	5.2	3.1	3.1	4
5		8.7	25	13	5.2	3.1	3.1	5
6		12	24	12	5.2	3.1	3.1	6
7		13	26	12	5.2	3.1	3.3	7
8		13	27	12	5.0	3.3	3.6	8
9		15	27	11	5.0	3.3	3.6	9
10		17	28	10	5.0	3.3	3.3	10
11		20	29	10	5.0	3.3	3.3	11
12		22	29	9.6	5.0	3.1	3.3	12
13		21	32	9.6	5.0	3.1	3.3	13
14		19	31	9.1	4.7	3.1	3.3	14
15		17	34	8.7	4.7	3.1	3.3	15
16		17	35	8.7	4.7	3.1	3.3	16
17		18	33	8.2	4.7	3.1	3.3	17
18		17	31	7.8	4.7	3.1	3.3	18
19		16	37	7.8	4.5	3.1	5.2	19
20		16	32	8.2	4.7	3.1	6.4	20
21		15	30	7.8	4.7	3.3	4.7	21
22		17	28	7.3	4.7	3.3	4.7	22
23		18	25	7.3	4.5	3.3	6.4	23
24		20	28	6.9	4.2	3.6	6.8	24
25		22	27	6.9	4.2	3.8	5.4	25
26		27	23	6.4	3.6	3.8	5.0	26
27		31	21	6.0	3.3	3.8	4.7	27
28		30	19	6.0	3.3	3.6	4.7	28
29		29	18	6.0	3.1	3.3	4.5E	29
30		26	17	6.0	3.1	3.1	4.2E	30
31			18		3.1	3.3		31
Mean		17.3	27.1	9.6	4.5	3.3	4.1E	Mean
Runoff In Acre-Feet		1030	1670	566	279	201	243E	Runoff In Acre-Feet

* Beginning of Record
E Estimated

Figure 11

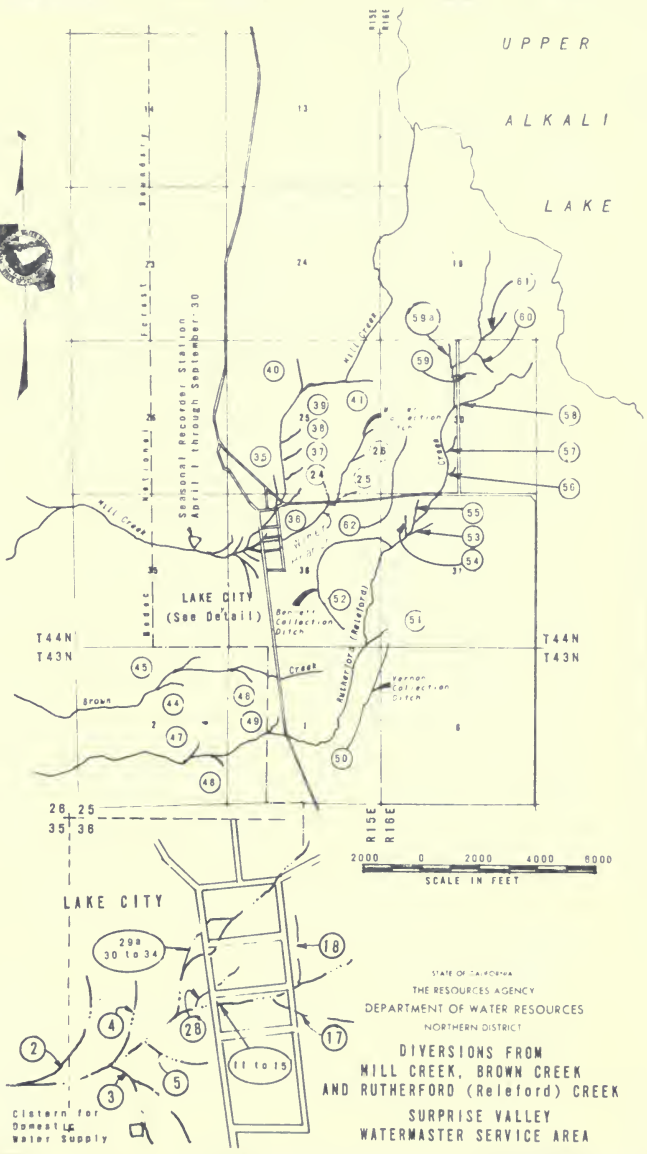

O R E G O N
CALIFORNIA
NEVADA
Indicates Detail Maps
GOOSE LAKE
TO LAKEVIEW OREGON
395
Bidwell Cr.
Fort Bidwell
17b
17a
17c
17d
17e
17f
17g
17h
17i
17j
MODOC
Big Sage Reservoir
SOUTHERN PACIFIC
North Fk
Lake City
Mill Cr.
Rattlesnake Cr.
Soldier Cr.
Pine Cr.
Cedar Pass
Cedar Cr.
Cedarville
North Deep Creek
South Deep Creek
TO WINNEMUCCA NEVADA
299
ALTURAS
Canby
Canby River
South Fork
Owl Cr.
Rabbit Hole Cr.
Highrock Cr.
Eagleville
Eagle Cr.
Emerson Cr.
Likely
Pit River
West Valley Res.
Adin
Madeline
Moon Lake
LASSEN
395
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
SURPRISE VALLEY
WATERMASTER
SERVICE AREA
Scale
0
5
10

DIVERSIONS FROM
MILL CREEK, BROWN CREEK AND RUTHERFORD(Releford) CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA

DIVERSION NUMBER	NAME	CFS
2	C Dixon	0.38
	H. Smith	0.24
3	N Bettendorff	1.38
	N McDaniels	0.13
	Domestic Users	0.08
4	J. Fogerty	0.30
	M. Larson	0.26
5	C Dixon	0.18
11,12,13,15,28	Town Users	1.92
17	N Bettendorff	2.01
18	Town Users	0.33
20	V Wimer	1.85
24	T. Dunton	1.45
26	E. Oarst	1.85
29A,30 to 34	Town Users	1.62
Channel	Cockrells Inc.	10.30
Channel	G W Warrens	1.85
44,45 and 46	W Gorzell	0.80
47	M Toney	0.01
	W Gorzell	0.575
	C Gorzell	0.275
	N. Bettendorff	0.30
48	F Hedgpeth	0.60
48 and 49	M Toney	1.64
54	Cockrells Inc	0.40
55,56 and 57	Cockrells Inc	0.75)*
58	Cockrells Inc.	0.10)*
58 and 59	W Odbert	0.90)*
59A	Cockrells Inc	0.35)*
61	G W Warrens	0.65
62	S Burger	1.65**
Channel of Rutherford Creek	Cockrells Inc	0.70
		37.13

* Water derived from Hay Collecting Ditch to be deducted from Decreed amount of direct diversion from Rutherford Creek

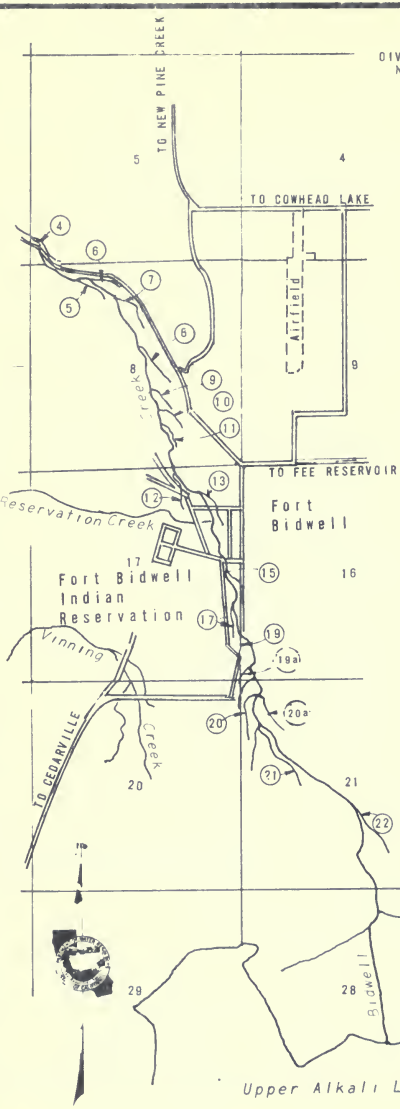
** Not under Watermaster report



STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM MILL CREEK, BROWN CREEK AND RUTHERFORD (Releford) CREEK

SURPRISE VALLEY WATERMASTER SERVICE AREA



DIVERSION NUMBER	NAME	CFS March 15 to July 9	CFS July 10 to Sept 30
4	Fort Bidwell Cattle Production Company	4 71	4 71
5	G. Peterson	0 38	0 35
	C. Bucher	0 45	0 35
	E. Uhrig	0 07	0 07
6	E. Uhrig	0 18	0 18
7	G. Peterson	0 50	0 40**
8	Fort Bidwell Cattle Production Company	7 24	7 24
	Town Users	0 06	0 06
9	J. McAuliffe	7 63	7 63
	Town Users	0 22	0 17
10	Carey Brothers	6 13	6 13
	C. Bucher	0 66	0.70*
	P. Peterson	0 44	0 44
	Town Users	0 30	0 24
11	C. Bucher	0 38	**
12	U.S. Indian Service	0 46	0.20
	Town Users	0 26	0 26
13	Fort Bidwell Cattle Production Company	5 24	5 24
	Town Users	0 44	0 44
15	Fee Ranch Inc	8 94	8 94
	L. Sagehorn	1 34	3 94*
	M. O'Callaghan	2 88	2 88*
	G. Toney	0 42	0 42*
	Town Users	0 03	0 03
17	E. Kober	0 05	0 05
19	R. Cole	4 26	4 26
20	L. Sagehorn	1 10	1 10
	Carey Brothers	0 95	0.95*
21	L. Sagehorn	1 39	1 39
	Carey Brothers	0 48	0.48
22	M. O'Callaghan	0 38	0 38
23	L. Sagehorn	1 79	1 79
X	L. Sagehorn	If flow is less than 3 82 cfs deficiency is made up by additional diversions through (15) if Fee Ranch allotment is satisfied.	

Reservation Creek-U.S. Indian Service Entire Flow

NOTE: Diversions (1) (2) and (3) are not shown as they are not part of the Watermaster Service Area

* Includes 0 10 cfs stockwater right not to be diverted from creek

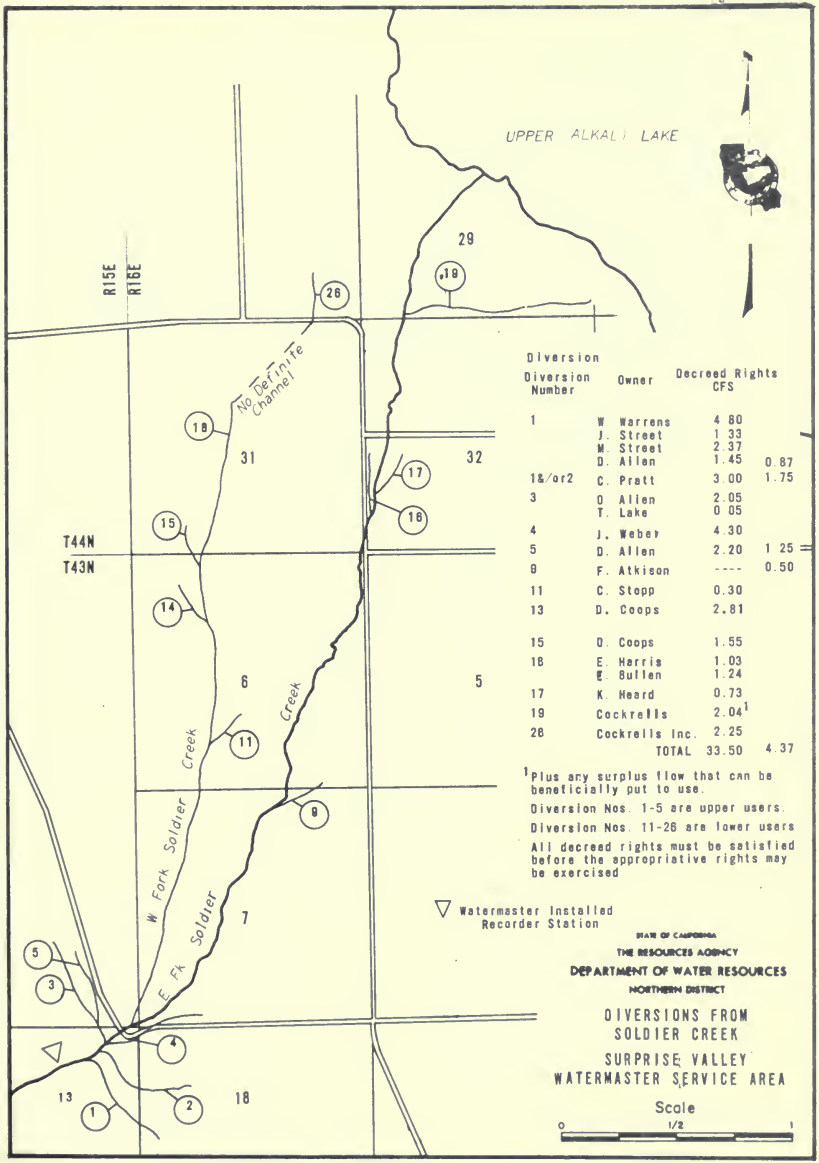
**Two 36 Hour periods of 2 00 cfs

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM BIDWELL CREEK

SURPRISE VALLEY WATERMASTER SERVICE AREA

Figure 17c



Diversion

Diversion Number	Owner	Decreed Rights CFS	
1	W. Warrens	4.80	
	J. Street	1.33	
	M. Street	2.37	
	D. Allen	1.45	0.87
1&/or2	C. Pratt	3.00	1.75
3	D. Allen	2.05	
	T. Lake	0.05	
4	J. Weber	4.30	
5	D. Allen	2.20	1.25
8	F. Atkison	----	0.50
11	C. Stopp	0.30	
13	D. Coops	2.81	
15	D. Coops	1.55	
16	E. Harris	1.03	
	E. Bullen	1.24	
17	K. Heard	0.73	
19	Cockrells	2.04[1]	
28	Cockrells Inc.	2.25	
	TOTAL	33.50	4.37

[1] Plus any surplus flow that can be beneficially put to use.

Diversion Nos. 1-5 are upper users.

Diversion Nos. 11-28 are lower users

All decreed rights must be satisfied before the appropriative rights may be exercised

▽ Watermaster Installed Recorder Station

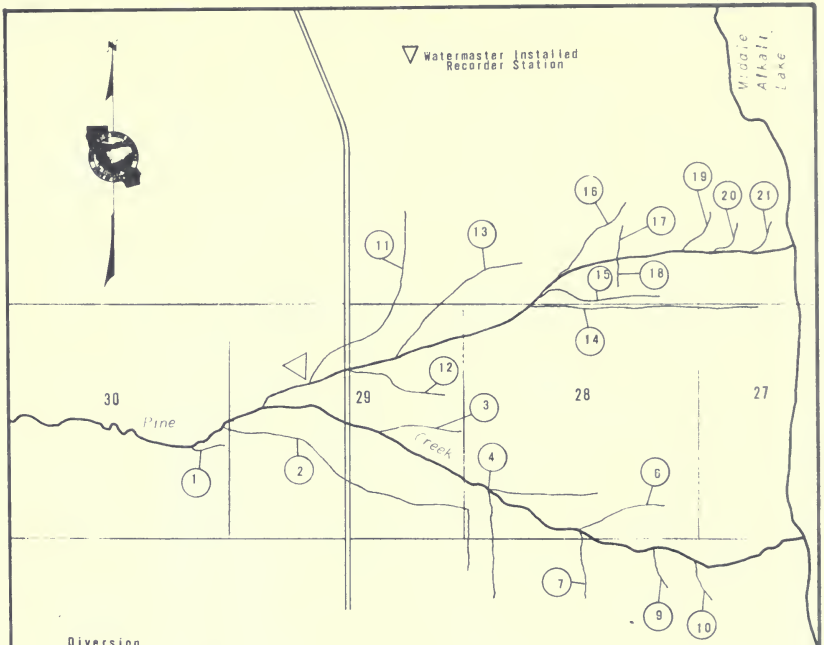
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM SOLDIER CREEK

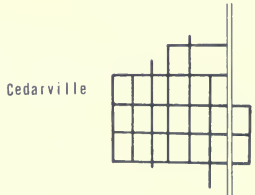
SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale

0 1/2 1



Diversion Number	Owner	CFS
1	Cal Vada Ranch	0 08 cfs
2	R. Bordwell	When flow is 1 6 cfs or less
17-21	Cal Vada Ranch	When flow= 1 6 cfs to 4 0 cfs When flow is greater than 4 0 cfs rotation as follows:
1; 11; 13-21	Cal Vada Ranch	345 5 Acre-feet
3; 14	C. Marx	60 0 Acre-feet
3; 6-10	C Hill	206 6 Acre-feet
2; 4	R. Bordwell	78 4 Acre-feet
12	V. McCully	2 5 Acre-feet
	TOTAL	693 0 Acre-feet (Total 1st & 2nd rotations)



T43N, R16E

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM PINE CREEK

SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale
0 1/2 1

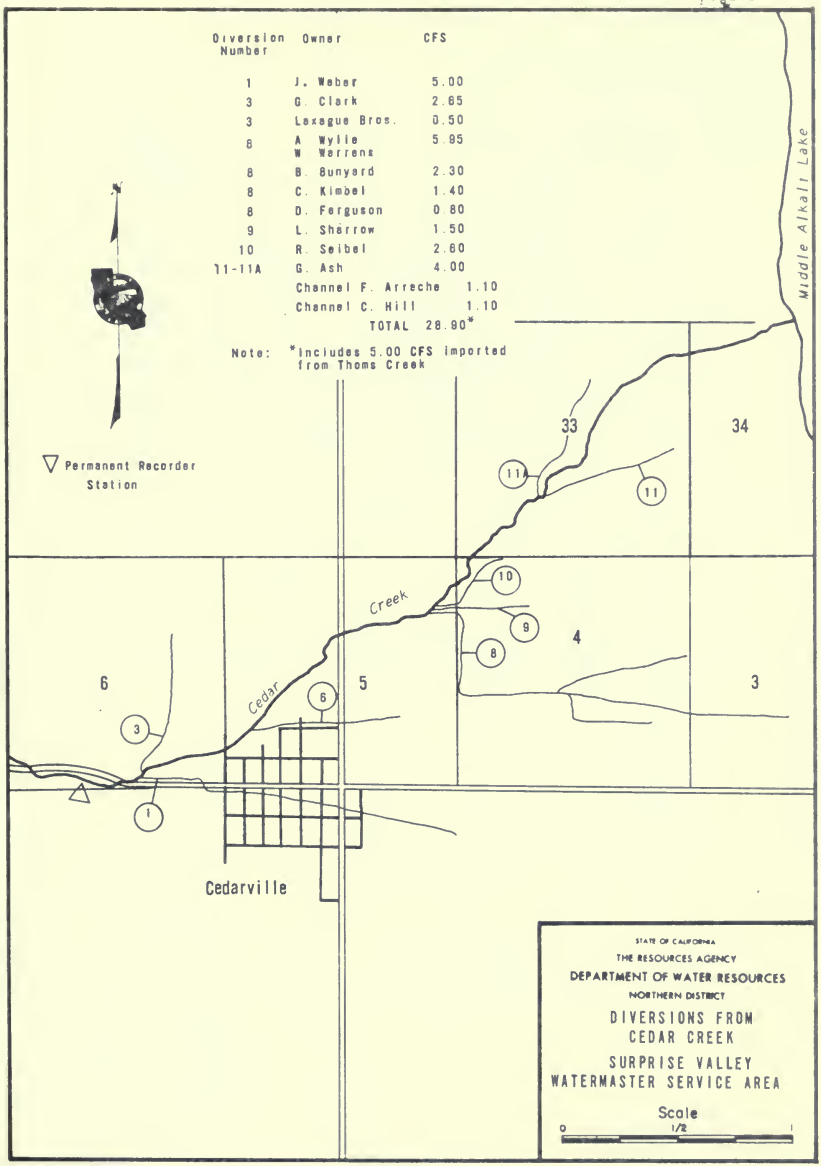

Diversion Number
Owner
CFS
1 J. Weber 5.00
3 G. Clark 2.65
3 Laxague Bros. 0.50
8 A Wylie W Werrenz 5.95
8 B. Bunyard 2.30
8 C. Kimbel 1.40
8 D. Ferguson 0.80
9 L. Sherrow 1.50
10 R. Seibel 2.60
11-11A G. Ash 4.00
Channel F. Arreche 1.10
Channel C. Hill 1.10
TOTAL 28.90*
Note: *Includes 5.00 CFS imported from Thoms Creek
Permanent Recorder Station
Middle Alkali Lake
33
34
11A
11
10
9
8
4
6
5
3
Cedar Creek
6
3
1
Cedarville
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM CEDAR CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA
Scale
0
1/2
1

Figure 17f

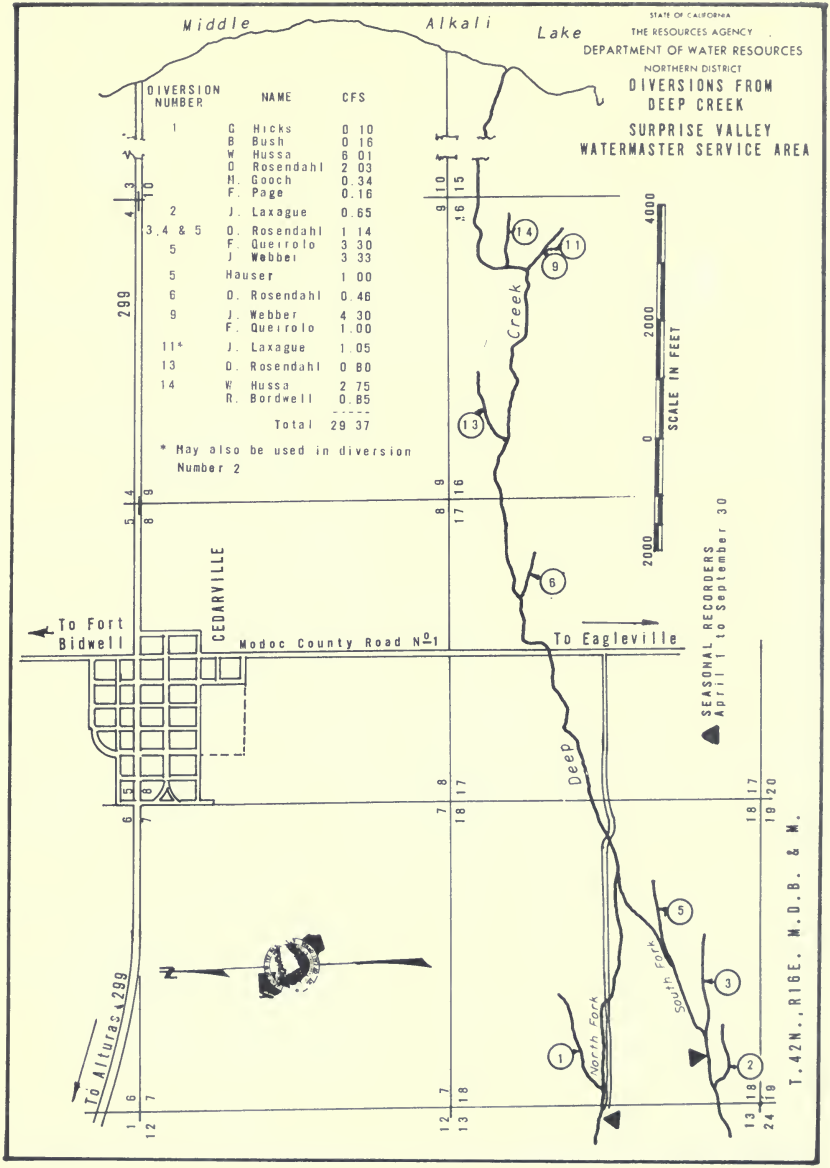
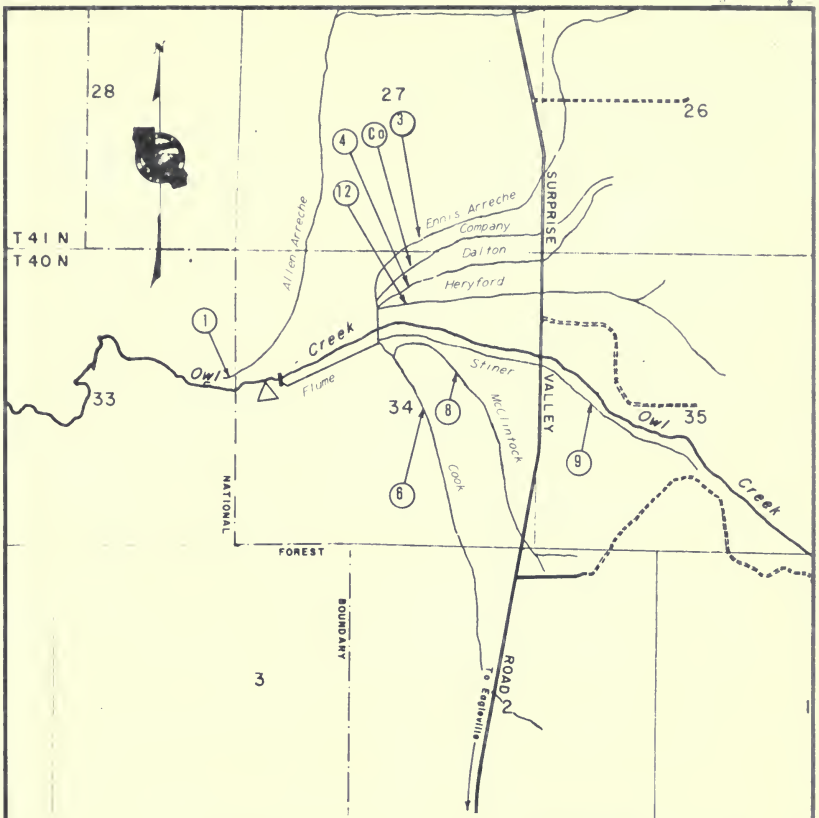

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM DEEP CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA
Middle Alkali Lake
DIVERSION NUMBER
NAME
CFS
1 G Hicks 0.10
B Bush 0.16
W Hussa 6.01
O Rosendahl 2.03
M. Gooch 0.34
F. Page 0.16
2 J. Laxague 0.65
3,4 & 5 O. Rosendahl 1.14
5 F. Queirolo 3.30
J Webber 3.33
5 Hauser 1.00
6 O. Rosendahl 0.46
9 J. Webber 4.30
F. Queirolo 1.00
11* J. Laxague 1.05
13 O. Rosendahl 0.80
14 W Hussa 2.75
R. Bordwell 0.85
Total 29.37
* May also be used in diversion Number 2
Deep Creek
SCALE IN FEET
4000
2000
0
2000
SEASONAL RECORDERS April 1 to September 30
CEDARVILLE
Modoc County Road No. 1
To Fort Bidwell
To Eagleville
To Alturas 299
299
Deep
North Fork
South Fork
T.42N., R16E., M.D.B. & M.

Figure 17g



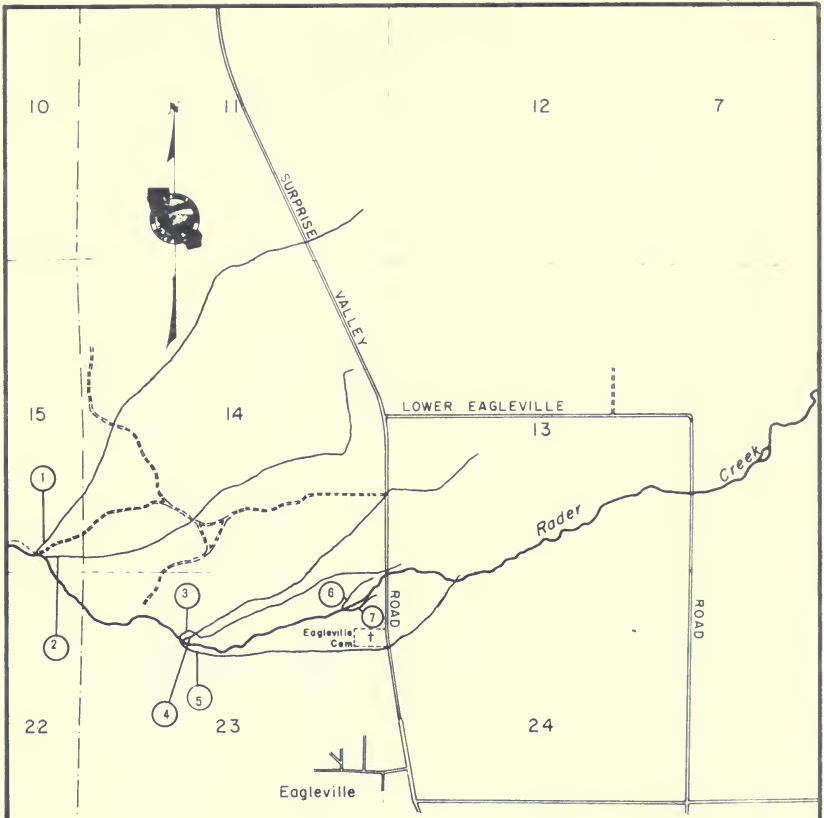
Diversion Number	Owner	CFS
1	W Cockrell	2 47
	J Stevenson	1 81
3	E. Davis	1 16
	J Stevenson	2 25
4	E Davis	3 14
5	S Stevenson	1 26
	B Radabaugh	1 81
	H Stanley	0 99
6 & 8	Cockrell's Inc	17 82
9	E. Berryessa	3 17
12	E. Berryessa	5 48
	Total	41 70 cfs

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
OWL CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Scale of Feet
0 1000 2000

Figure 17h



T44N R16E M D B & M

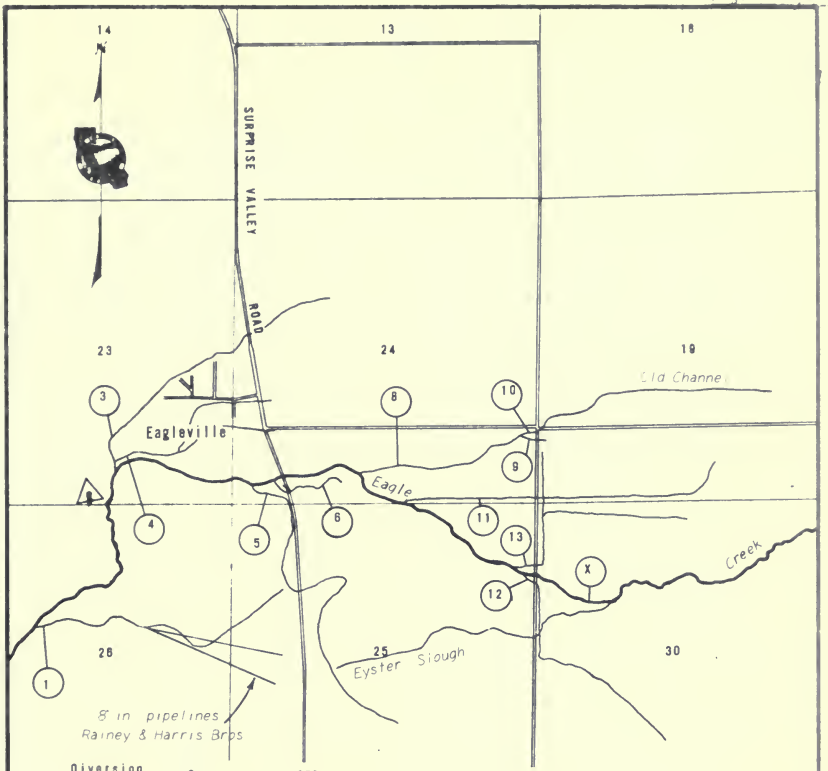
Diversion Number	Owner	CFS
1	L. Cockrell	1/7 of total flow from May 20, until water will not reach place of use. 3.00
2	Lazy S J Ranch Inc	3.50
3	E Minto	2.39
4	Betford Corp.	9.00
5	Betford Corp	2.35
6	C Minetti	0.08
7	R Reeves	0.08
	Total	21.00

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM RADER CREEK

SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale of Feet
0 1000 2000



Diversion Number	Owner	CFS	
1	Harris Bros.	0.41	
	R. Morgan	0.36	
	C. Rainey	0.51	
3	13 Town users	0.98	
	Betford Corp.	5.00	
4	15 Town users	1.36	
	Betford Corp.	1.20	
5	Harris Bros.	0.50	
6, 8	Betford Corp.	2.85	
9	Lazy S J Ranch	0.15	
10	M. Stevenson	3.15	(minus any water recieved from prior collecting ditch)
11	Betford Corp.	0.55	
	Lazy SJ Ranch	1.95	
	J. Grove	0.20	
12	J Grove	0.70	
	M Miura	1.20	
13	J Grove	2.00	
X	Harris Bros.	6.90	(any water over 0.7 cfs from Eyster Slough must be deducted from this)

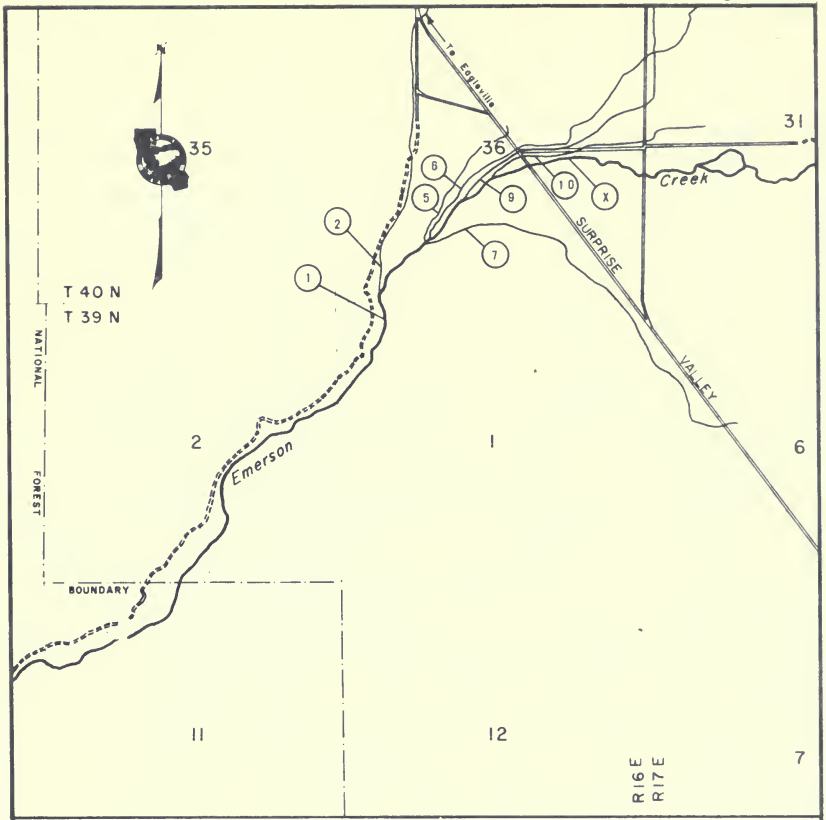
T44N., R16E. M.D.B.&M

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM
EAGLE CREEK
SURPRISE VALLEY
WATERMASTER SERVICE AREA

Scale of Miles
0 ½ 1

Figure 17j



Diversion Number	Owner	CFS
1	C Rainey	2 00
2	Harris Bros D Romagnoli	2 00 0 20
5	J Diconda	3.30
6	Lazy S J Ranch Inc J Miura	0 60 2 25
7	E Derryessa	5.15
9	W Warren	1 60
10	J Espil	1 80
X	D Grove	5 75
	TOTAL	24 65

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM EMERSON CREEK
SURPRISE VALLEY WATERMASTER SERVICE AREA

Scale of Feet
0 1000 2000

Susan River Watermaster Service Area

The Susan River service area is situated in southern Lassen County in the vicinity of Susanville. The primary area of water use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a distance of about 25 miles. The valley floor is at an elevation of about 4,000 feet. The source of supply is comprised of three stream systems: the Susan River, Baxter Creek, and Parker Creek, with their respective tributaries.

The Susan River originates on the east slope of the Sierra Nevada immediately east of Lassen National Park at an elevation of about 7,900 feet. Its channel runs easterly from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

The Susan River has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen Creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen Creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow Creeks are on the south slopes of Round Valley Mountain at lower elevations.

A short distance below its confluence with Willow Creek, the Susan River divides into three channels: Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank farther downstream.

The Baxter Creek stream system is in Honey Lake Valley on the east slope of the Sierra Nevada, about 10 miles southeast of Susanville. The principal creeks in the system are: Baxter Creek, which rises in the extreme western portion of the basin and flows in an easterly direction, and Elesian, Sloss, and Bankhead Creeks, tributaries of Baxter Creek from the south.

Parker Creek is also in Honey Lake Valley on the east slope of the Sierra Nevada, about 15 miles southeast of Susanville. It rises on the east slope of Diamond Mountain and flows in an easterly direction for about 5 miles into Honey Lake.

Maps of the Susan River service area, showing the stream systems, diversions, etc., are presented as Figures 18 through 18f, pages 164 through 171.

Basis of Service

The waters of Susan River and its tributaries are distributed in accordance with the water rights defined in Decree No. 4573, Lassen County Superior Court, entered on April 18, 1940. Schedule 3 of the decree defines the rights to the use of water from Willow Creek in Willow Creek Valley, Lower Willow Creek, and the Susan River delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run, Piute, Hills, Holtzclaw, and Lassen Creeks above their confluence with the Susan River. Schedules 5 and 6 of the decree define the rights to the use of water from the Susan River exclusive of its tributaries. The decree establishes three priority classes each on Susan River and Gold Run Creek, two on Willow Creek, and one each on Piute and Hills Creeks.

The water of Baxter Creek and its tributaries is distributed in accordance with the water rights defined in the statutory adjudication as set forth in Decree No. 8174, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Sloss and Bankhead Creeks and

Schedule 4 the rights to the use of water from Baxter and Elesian Creeks. The Baxter Creek rights are divided into five priority classes.

The water of Parker Creek and its tributaries is distributed in accordance with the water rights defined by a statutory adjudication as set forth in Decree No. 8175, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Parker Creek, with four priority classes.

The Susan River watermaster service area was created by order of the Division of Water Resources on November 10, 1941. The Baxter and Parker Creek stream systems were added to the Susan River service area on February 16, 1956. There are 160 water right owners in the service area with total allotments of 351.732 cubic feet per second.

Water Supply

The water supply in the Susan River service area is obtained from two major sources, snowmelt runoff and springs. Snowpack on the Willow Creek Valley and Piute Creek watersheds, which embrace more than one-half of the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this portion of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen, Gold Run, Baxter, and Parker Creeks and the Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

The Lassen Irrigation Company stores supplemental water in Hog Flat and McCoy Flat Reservoirs, on the headwaters of the Susan River. This stored water is released into the Susan River Channel and commingled with the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation Company.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 55 through 59, pages 161 through 163.

Method of Distribution

Irrigation in the Susan River service area is accomplished by placing dams in the main channels, thus raising the water level for subsequent diversion into canals and ditches. These diversion dams are relatively large on the Susan River Channel and generally much smaller on the various creeks. Wild flooding is the most common method of irrigation in practice. Portions of the irrigated lands have been leveled, permitting a more efficient use of water by using border checks and furrows. Subirrigation occurs in some areas incidental to surface irrigation or as a result of seepage from ditches and creek channe

The Lassen Irrigation Company is allowed to use its three reservoirs, McCoy Flat, Hog Flat and Lake Leavitt, to store wate as follows: (a) between March 1 and July 1 when the flow in the river just above its confluence with Willow Creek is more than 20 cubic feet per second, and (b) at all other times when the flow at the same point is 5 cubic feet per second, in spite of the allotments outlined in Schedules 3, 6, and users of third priority class in Schedule 5 of the Susan River decree.

1973 Distribution

Watermaster service began in the Susan River service area on April 1 and contin ued until September 30 with Lester L. Lighthall, Water Resources Technician II, as watermaster.

The available natural water supply throughout the service area was below

average. The season ended with no carryover in the Lassen Irrigation Company reservoirs.

Parker Creek. The available water supply in Parker Creek was sufficient to satisfy all allotments (four priorities) until April 27. From April 27 to May 24 the flow decreased rapidly to first priority allotments. From May 24 throughout the remainder of the season only first priority allotments were served.

Baxter Creek. The available water supply was sufficient to satisfy 50 percent of third priority allotments (five priorities) until April 5. The flow decreased from April 5 to May 17 when approximately 60 percent of second priority allotments were supplied. The flow at Diversion 75 dropped to 1 cubic foot per second on June 12. In accordance with the decree, all of the flow at this point was diverted into Long Ditch for stockwater use. From June 12 throughout the remainder of the season only stockwater allotments were served.

Lassen-Holtzclaw Creeks. The available water supply in Lassen-Holtzclaw Creeks was sufficient to meet all allotments (two priorities) until May 25. The flow decreased to first priority allotments on June 14. From June 14 throughout the remainder of the season the Tangeman Ranch was entitled to all of the water available in the stream.

Hills Creek. The available water supply in Hills Creek was sufficient to supply all allotments (one priority) until June 1. The storage facilities on Hills Creek were not filled. First priority water declined until July 4 when only stockwater was available to the Amesbury Ranch.

Gold Run Creek. The available water supply in Gold Run Creek was sufficient to supply all allotments (three priorities) until May 22. Between May 22 and July 1, the flow decreased steadily. After July 1 the flow remained reasonably constant at about 5 percent of second priority allotments.

Piute Creek. The available water supply in Piute Creek was sufficient to satisfy all allotments (one priority).

Willow Creek. The available water supply in Willow Creek was sufficient to supply all allotments (two priorities) throughout the season.

Susan River. The available water supply in the Susan River was sufficient to supply all allotments in Schedule 6 (three priorities) until May 20. As the flow receded, Schedule 6 was terminated for the season. All allotments in Schedule 3 (three priorities - Lower Susan River) were satisfied until mid-June. Throughout the remainder of the season there was enough water for about 60 percent of second priority allotments in this schedule.

All allotments in Schedule 5 (three priorities - Upper Susan River area) were satisfied until May 26. The flow receded until June 20 when there was enough water for about 15 percent of the second priority allotments. Throughout the remainder of the season the flow remained constant.

Lassen Irrigation Company Reservoirs. The Susan River decree allows the Lassen Irrigation Company's McCoy Flat and Lake Leavitt Reservoirs to store surplus water during the winter and spring months. Once filled, or if a shortage occurs among downstream water right owners, the natural flow in the Susan River above McCoy Flat Reservoir must be released.

Spring runoff was insufficient to fill Hog and McCoy Flat Reservoirs, but Lake Leavitt filled as usual. Shortages began to occur in early June, and controlled releases began on June 4. The company requested that its releases from Hog Flat Reservoir begin so that the water elevation in Lake Leavitt could be kept high enough to allow irrigation to continue out of High Canal. Releases continued until June 30 at which time Hog Flat Reservoir was emptied. Releases from McCoy Flat Reservoir

began on June 11 and continued until July 30 at which time McCoy Flat Reservoir was emptied.

Special Occurrences

Repairs were completed on Mahle Dam on Dill Slough at the head of Hartson Slough, including rock revetment below the structure in both channels. A stage recording station was installed on the outlet of Lake Leavitt and several flow measurements were made.

SUSAN RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 55

SUSAN RIVER AT SUSANVILLE

Day	March	April	May	June	July	August	September	Day
1	181	108	170	84	86	9.4	8.1	1
2	147	95	170	52	76	7.4	5.7	2
3	118	95	172	46	77	7.2	5.7	3
4	100	108	176	42	101	6.5	5.7	4
5	90	137	160	79	100	6.1	5.5	5
6	87	189	141	76	98	4.8	6.1	6
7	81	207	141	75	97	4.5	5.3	7
8	81	181	143	73	97	4.4	5.7	8
9	86	205	141	69	121	4.4	6.1	9
10	139	249	143	86	123	4.5	6.1	10
11	186	272	141	63	123	4.8	6.5	11
12	116	215	145	108	121	4.5	6.1	12
13	101	212	160	110	118	4.5	5.9	13
14	88	185	160	110	116	4.6	5.8	14
15	84	224	162	108	115	4.6	6.1	15
16	89	220	155	71	116	4.5	6.1	16
17	101	200	145	56	115	4.5	6.7	17
18	88	180	139	52	112	4.6	7.6	18
19	90	175	145	48	108	4.8	8.2	18
20	89	182	123	43	105	4.8	13	20
21	83	202	108	38	102	5.0	10	21
22	81	215	92	74	101	5.1	9.2	22
23	82	240	85	78	96	5.5	11	23
24	92	212	84	78	94	6.5	11	24
25	110	188	85	78	89	6.7	9.4	25
26	135	160	76	82	85	6.9	9.7	26
27	139	160	68	101	78	7.2	8.4	27
28	118	185	61	103	57	6.9	8.4	28
29	102	165	56	103	22	6.7	8.6	28
30	101	163	59	96	13	5.7	8.4	30
31	116		66		11	5.7		31
Mean	107	184	125	74.6	92.7	5.6	7.5	Mean
Runoff In Acre-Feet	6550	10920	7700	4450	5700	343	445	Runoff In Acre-Feet

TABLE 56

GOLD RUN CREEK NEAR SUSANVILLE

Day	March	April	May	June	July	August	September	Day
1		4.4*	25	10	1.9	1.3	1.2	1
2		4.4	23	8.4	1.8	1.3	1.2	2
3		4.4	23	7.8	1.8	1.3	1.2	3
4		5.0	23	7.8	1.8	1.4	1.2	4
5		8.8	20	7.5	1.8	1.2	1.1	5
6		9.3	18	7.0	1.8	1.2	1.1	6
7		8.3	19	8.0	1.8	1.2	1.1	7
8		7.9	20	8.0	1.7	1.2	1.2	8
9		9.9	22	8.0	1.7	1.2	1.2	9
10		12	23	8.0	1.7	1.2	1.2	10
11		14	28	5.8	1.7	1.2	1.1	11
12		15	39	5.2	1.7	1.2	1.1	12
13		13	51	5.0	1.7	1.2	1.1	13
14		12	58	4.7	1.7	1.2	1.1	14
15		11	51	4.2	1.8	1.2	1.2	15
16		10	45	3.8	1.6	1.2	1.2	16
17		11	41	3.4	1.7	1.2	1.2	17
18		9.9	41	3.1	1.7	1.2	1.2	18
19		9.1	41	3.1	1.7	1.2	1.2	19
20		7.9	36	2.8	1.8	1.2	1.4	20
21		7.9	28	2.6	1.8	1.2	1.8	21
22		10	22	2.5	1.7	1.2	1.8	22
23		13	19	2.5	1.8	1.3	1.5	23
24		15	18	2.5	1.5	1.4	1.4	24
25		18	18	2.4	1.5	1.5	1.5	25
26		28	20	2.3	1.5	1.6	1.5	26
27		38	13	2.2	1.5	1.7	1.8	27
28		34	12	2.1	1.4	1.5	1.7	28
29		32	12	2.0	1.4	1.3	1.7	29
30		29	11	2.0	1.4	1.1	1.7	30
31			11		1.4	1.1		31
Mean		13.6	26.6	4.6	1.6	1.3	1.3	Mean
Runoff In Acre-Feet		812	1850	271	101	78	78	Runoff In Acre-Feet

* Beginning of Record

SUSAN RIVER WATERMASTER SERVICE AREA

1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 57

SUSAN RIVER AT JOHNSTONVILLE BRIDGE

Day	March	April	May	June	July	August	September	Day
1		86*	93					1
2		88	85					2
3		**	86					3
4			91					4
5			90					5
6			76					6
7			71					7
8			62					8
9			59					9
10			58					10
11			63					11
12			62					12
13			77					13
14			82					14
15			70					15
16			66					16
17			59					17
18			56					18
19			58					19
20			48					20
21			41					21
22			27					22
23			20					23
24			25					24
25			37					25
26			29					26
27			19					27
28			12					28
29			9.5					29
30		**	11					30
31			16***					31
Mean			56.3					Mean
Runoff In Acre-Feet			3460					Runoff In Acre-Feet

* Beginning of Record
** Mean daily flow from April 3 to April 30 was in excess of 100 cfs.
*** End of Record

TABLE 58

WILLOW CREEK NEAR SUSANVILLE

Day	March	April	May	June	July	August	September	Day
1	181	48	15	14	11	13	13	1
2	152	45	15	14	11	13	13	2
3	129	44	16	14	11	13	16	3
4	113	24	19	13	11	13	20	4
5	91	23	19	13	11	13	20	5
6	84	23	17	12	11	12	20	6
7	76	22	16	12	11	12	20	7
8	72	20	16	12	11	12	19	8
9	66	24	16	12	11	12	25	9
10	76	26	17	11	12	12	23	10
11	83	25	17	11	12	13	21	11
12	71	26	17	11	12	13	21	12
13	71	26	16	11	13	12	21	13
14	61	26	16	11	12	11	22	14
15	57	27	14	11	12	11	23	15
16	55	26	13	11	12	10	25	16
17	54	26	13	11	12	10	26	17
18	51	26	13	11	12	10	26	18
19	50	24	13	11	12	10	26	19
20	56	26	13	11	12	10	28	20
21	52	28	13	11	16	10	32	21
22	51	30	13	11	14	11	30	22
23	49	30	13	11	14	11	30	23
24	49	24	13	11	13	11	30	24
25	49	20	14	11	13	12	30	25
26	49	14	13	11	13	12	30	26
27	48	14	13	11	14	12	29	27
28	50	14	12	11	16	12	29	28
29	52	14	13	11	15	12	28	29
30	53	14	13	11	14	12	29	30
31	52		14		13	12		31
Mean	71.1	25.3	14.7	11.6	12.6	11.7	24.2	Mean
Runoff In Acre-Feet	4370	1510	902	688	768	718	1440	Runoff In Acre-Feet

SUSAN RIVER WATERMASTER SERVICE AREA

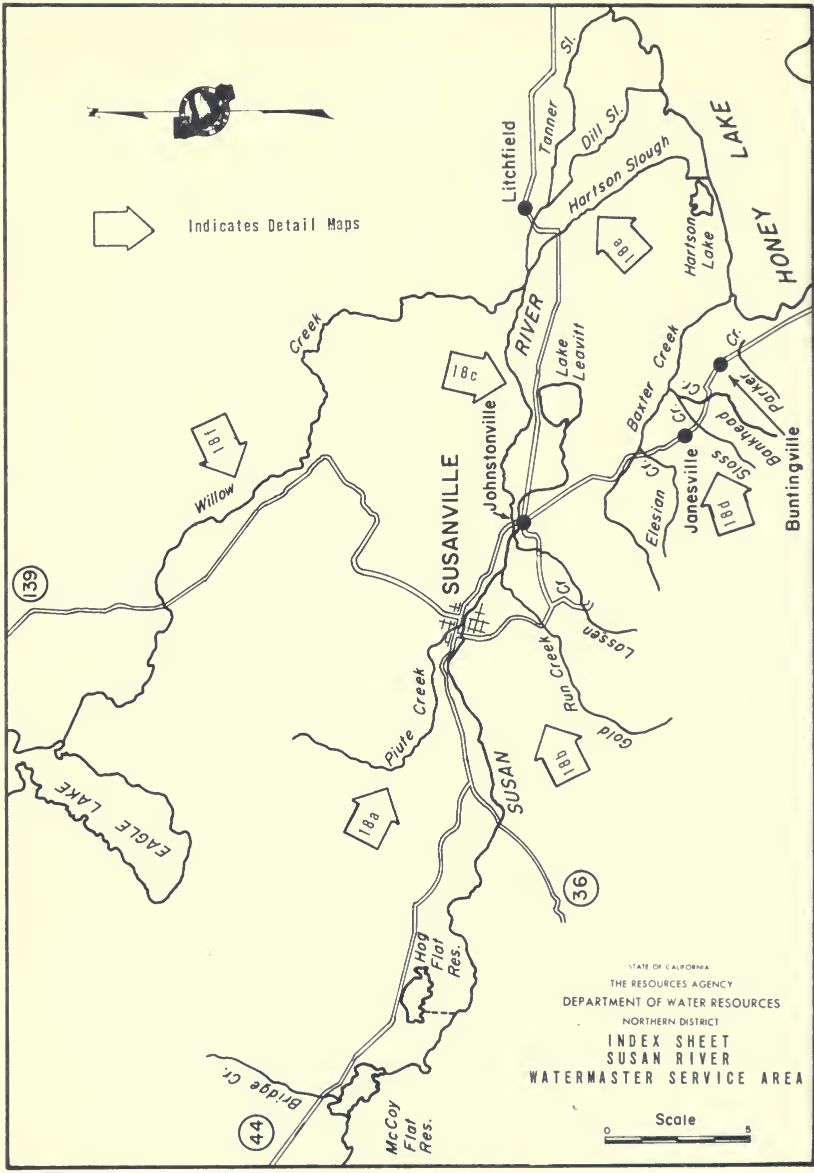
1973 Daily Mean Discharge in Cubic Feet Per Second

TABLE 59

OPERATION OF McCOY AND HOG FLAT RESERVOIRS

Day	McCoy Flat Res. Inflow from Susan River		McCoy Flat Res. Releases to Susan River		Hog Flat Res. Releases to Susan River	Transfer of Lassen Irrig. Dist. Water from McCoy Flat and Hog Flat Res. to Lake Leavitt		Day
	May	June	June	July	June	June	July	
1		20		75			78	1
2		18		44			74	2
3		15		104			87	3
4		12		103	34[3/]		84	4
5		8.3		103	54	27[1/]	84	5
6		5.7		101	51	35	84	6
7		3.4		99	48	27	84	7
8		1.5		125	45	25	84	8
9		0.8[2/]		142	43	21	110	9
10		0.3[2/]		137	40	19	123	10
11			31[3/]	131	50	19	120	11
12			50	129	53	35	118	12
13			51	127	51	52	116	13
14			52	125	49	55	113	14
15			22	120	45	69	118	15
16			0.0	118	41	58	119	16
17			0.0	115	37	37	103	17
18			0.0	113	33	57	97	18
19			0.0	110	29	59	87	19
20	101[1/]		0.0	108	25	37	93	20
21	88		41	106	21	37	89	21
22	68		53	103	17	53	87	22
23	55		56	100	13	61	86	23
24	50		57	94	10	60	85	24
25	50		64	90	7.9	57	81	25
26	55		90	83	6.0	65	78	26
27	43		102	67	4.7	85	73	27
28	32		107	11	3.5	93	68	28
29	28		100	6.0[4/5/]	2.3	93	56	29
30	20		85	5.0[4/5/]	1.4[4/5/]	95	20	30
31	15						6.0[2/4/]	31
Mean	49.9	8.5	48.0	96.5	30.2	51.2	87.2	Mean
Runoff In Acre-Feet	1190	169	1910	5740	1620	2640	5360	Runoff In Acre-Feet

1/ Beginning of Record
2/ End of Record
3/ Beginning of Releases
4/ End of Releases
5/ End of Flow


Indicates Detail Maps
18a
18b
18c
18d
18e
18f
SUSANVILLE
Litchfield
Johnstonville
Janesville
Buntingville
HONEY LAKE
Hartson Lake
Lake Leavitt
EAGLE LAKE
Hog Flat Res.
McCoy Flat Res.
SUSAN RIVER
Tanner Sl.
Dill Sl.
Hartson Slough
Baxter Creek
Parker Cr.
Bankhead Cr.
Sloss Cr.
Elesian Cr.
Willow Creek
Piute Creek
Lassen Cr.
Gold Run Creek
Bridge Cr.
139
36
44
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
INDEX SHEET
SUSAN RIVER
WATERMASTER SERVICE AREA
Scale
0
5

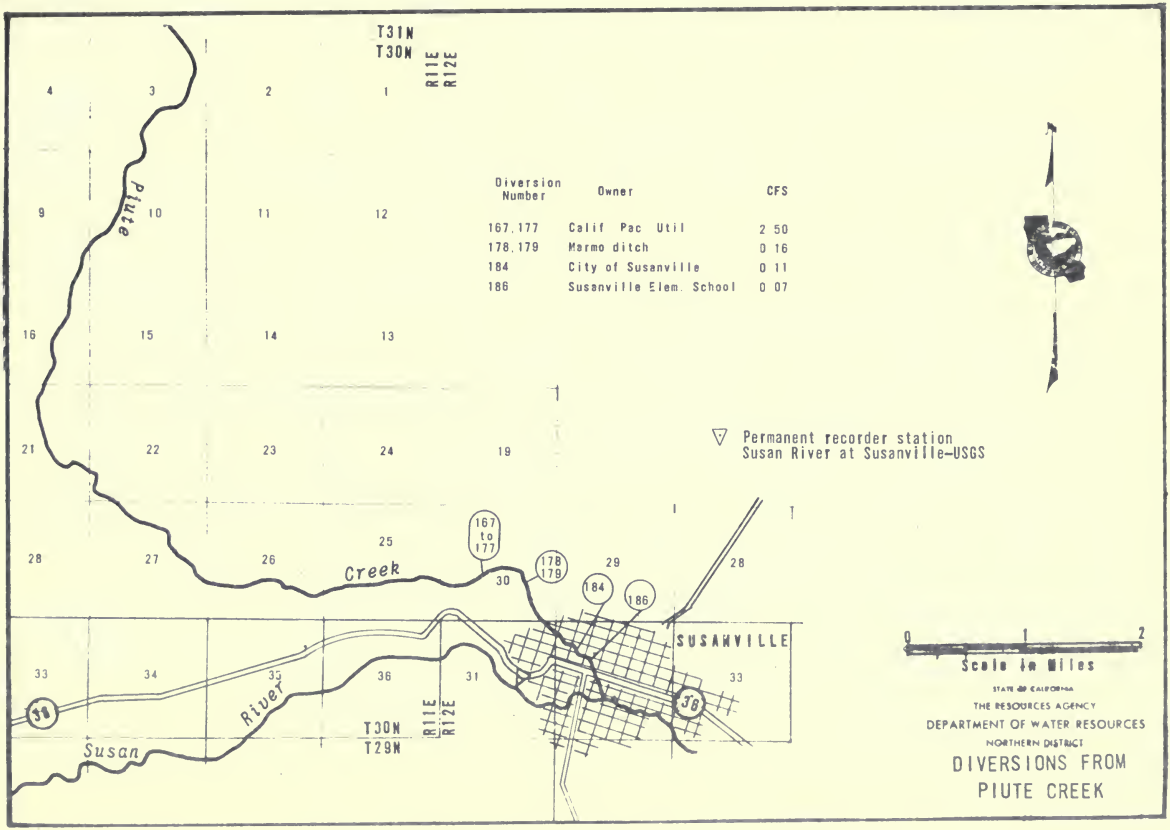
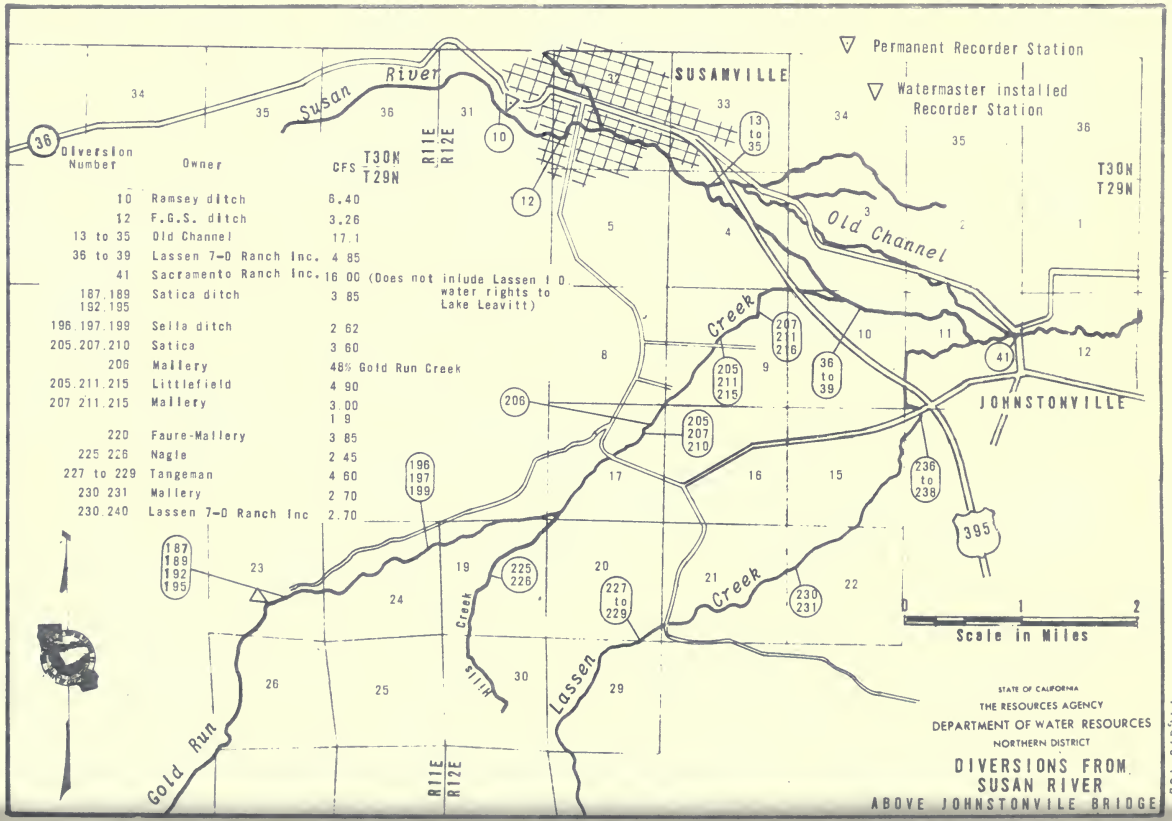

T31N
T30N
R11E
R12E
4
3
2
1
9
10
11
12
16
15
14
13
21
22
23
24
19
28
27
26
25
30
29
28
33
34
35
36
31
33
T30N
T29N
R11E
R12E
Piute
Creek
Susan
River
167 to 177
178 179
184
186
SUSANVILLE
36
36
Diversion Number
Owner
CFS
167, 177
Calif Pac Util
2 50
178, 179
Marmo ditch
0 16
184
City of Susanville
0 11
186
Susanville Elem. School
0 07
Permanent recorder station
Susan River at Susanville—USGS
0
1
2
Scale in Miles
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM
PIUTE CREEK

Figure 1a



Diversion Number	Owner	CFS
10	Ramsey ditch	6.40
12	F.G.S. ditch	3.26
13 to 35	Old Channel	17.1
36 to 39	Lassen 7-D Ranch Inc.	4 85
41	Sacramento Ranch Inc.	16 00 (Does not inlude Lassen I D water rights to Lake Leavitt)
187.189 192.195	Satica ditch	3 85
196.197.199	Selta ditch	2 62
205.207.210	Satica	3 60
206	Mallery	48% Gold Run Creek
205.211.215	Littlefield	4 90
207 211.215	Mallery	3.00 1 9
220	Faure-Mallery	3 85
225 226	Nagle	2 45
227 to 229	Tangeman	4 60
230 231	Mallery	2 70
230.240	Lassen 7-D Ranch Inc	2.70

Figure 18b

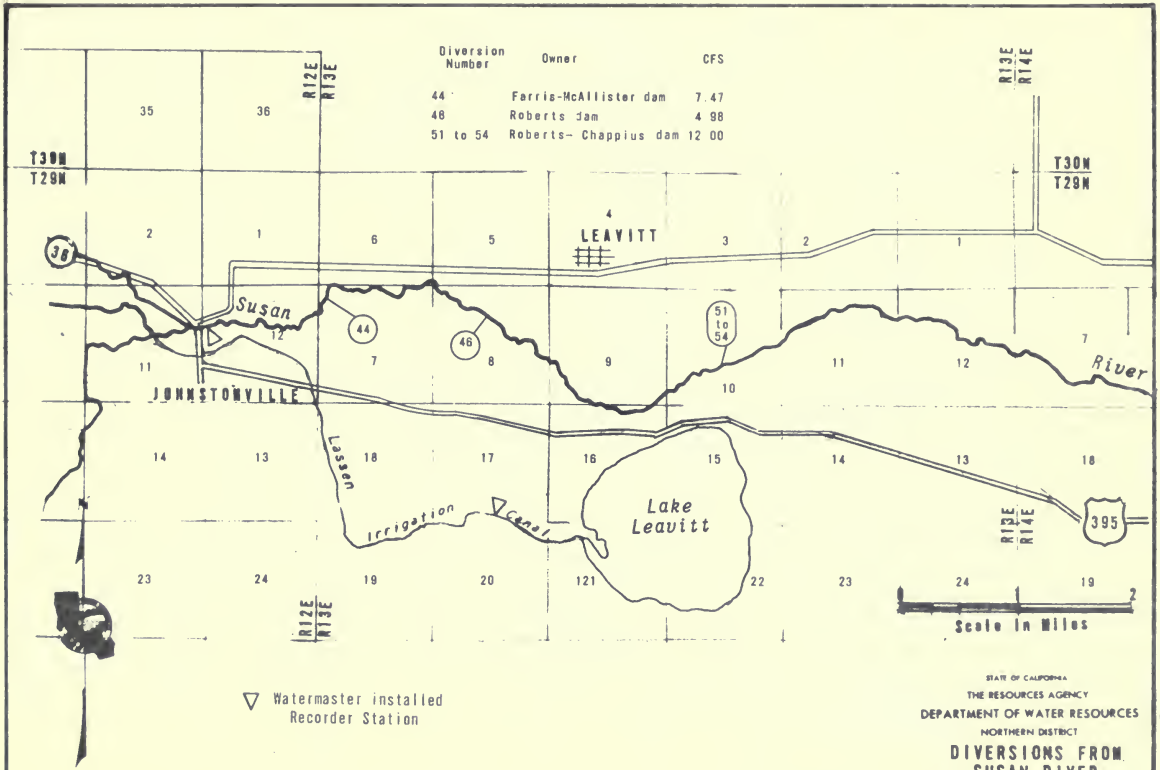
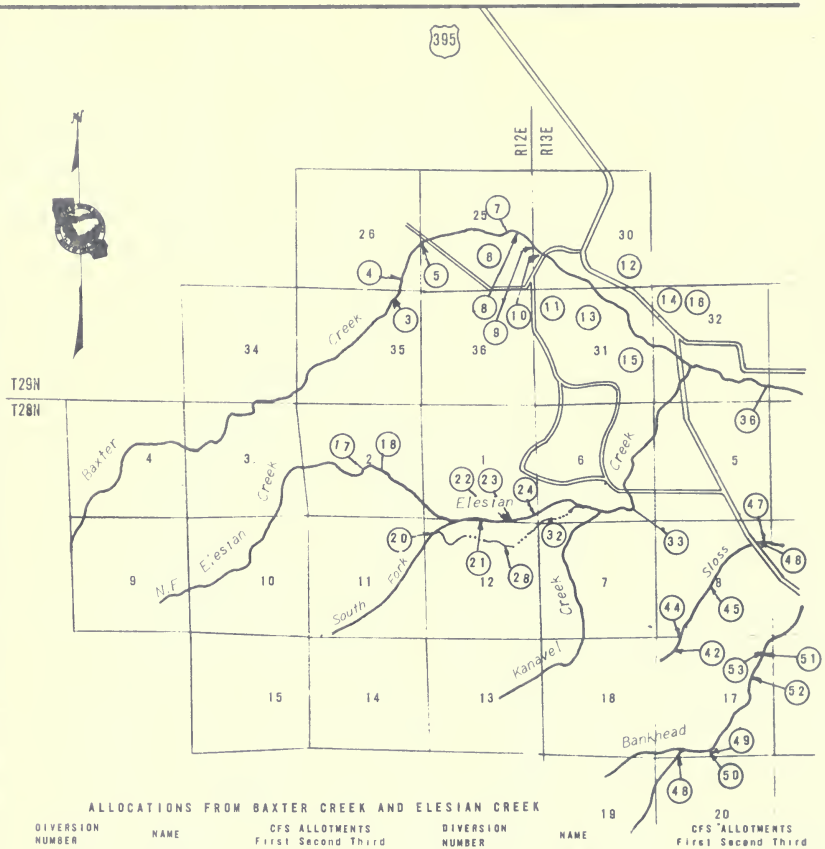

Diversion Number
Owner
CFS
44
Farris-McAllister dam
7.47
46
Roberts dam
4.98
51 to 54
Roberts- Chappius dam
12.00
T30N
T29N
R12E
R13E
R13E
R14E
35
36
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
LEAVITT
Susan River
JOHNSTONVILLE
Lassen
Irrigation
Canal
Lake Leavitt
36
44
46
51 to 54
395
Scale in Miles
Watermaster installed Recorder Station
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM SUSAN RIVER ABOVE WILLOW CREEK

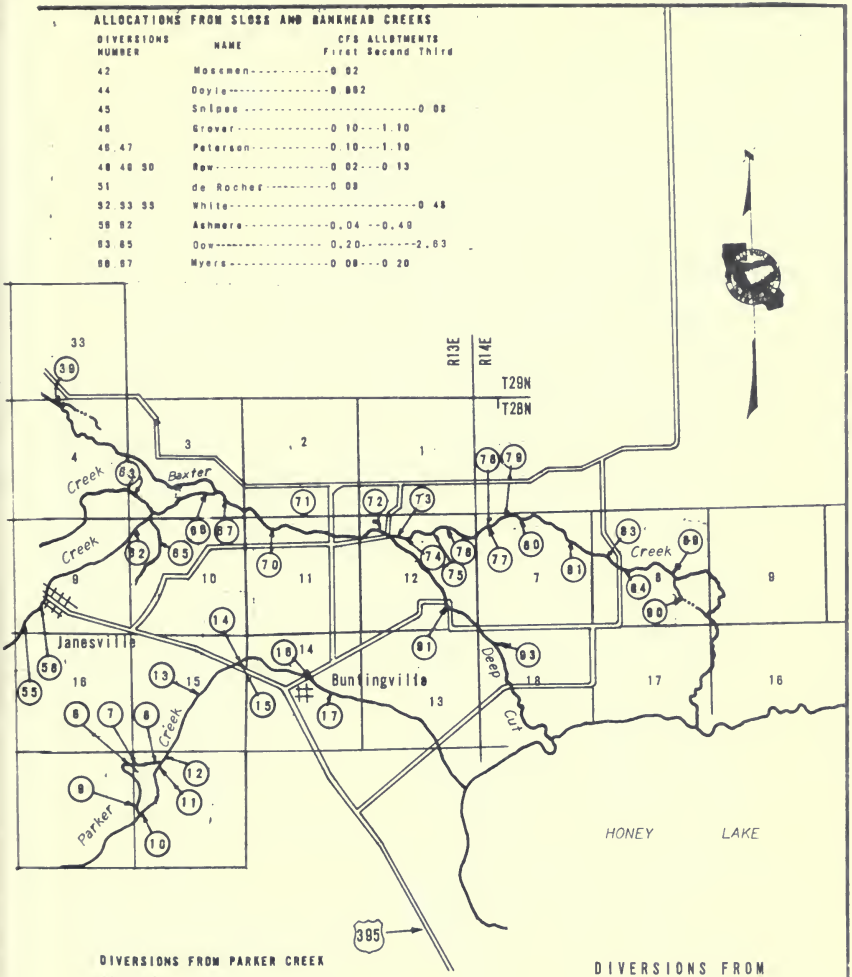
Figure 18c



ALLOCATIONS FROM BAXTER CREEK AND ELESIAN CREEK

DIVERSION NUMBER	NAME	CFS ALLOTMENTS First	Second	Third
3,4 5	Dickson	2 50		
8 7 8 10	Gray Eagle Corp	0 68		0 20
19	Burnett, Baker			0 20
8, 9, 10 12	Mallery	2 80	0 43	
8 12 13,) 14 15 18)	Mallery	2 52	0 97	
18	Gray Eagle Corp	0 10	0 42	
17 18	Bronsom	0 18		
17 21) 28 27)	Bass	4 10		
17 22 23) 24 28 32) 33)	Bridges	2 82		
17 22 23) 24 28 32) 33)	Kanaval	4 58		
38 39	Peterson			1 42
70	Ahern	0 02		

DIVERSION NUMBER	NAME	CFS ALLOTMENTS First	Second	Third
71,72	A & K Company	0 02		1 80
75,77) 79,80)	Blickenstaff			0 84
78	U.S. Hertz Inc.			1 05
81 83	Blickenstaff			2 66
73,75	Gerze		0 88	0 28
74 78	Hemphill		0 98 0 88	
75,77	Dieter		1 55	0 40
75 77 80	Dieter		0 30	
77 79	Mulroney		0 90	0 90
78	Mulroney			0 67
78	Cummings			0 15
81 83	Blankenship			0 50
84 90	Dow			1 80
85 88	Masters, Mc Donald			1 60


ALLOCATIONS FROM SLOSS AND BANKHEAD CREEKS
DIVERSIONS NUMBER
NAME
CFS ALLOTMENTS First Second Third
42 Moscmen---------0 02
44 Doyle-----------0 002
45 Snipes ----------0 08
46 Grover----------0 10---1.10
46,47 Peterson----------0.10---1.10
48 48 50 Row---------0 02---0 13
51 de Rocher---------0 08
52 53 55 White----------0 48
56 62 Ashmore----------0.04 --0.40
63 65 Dow----------0.20-------2.63
66 67 Myers----------0 08---0 20
R13E
R14E
T29N
T28N
Baxter Creek
Creek
Janesville
Buntingville
Deep Cut
Parker Creek
HONEY LAKE
395
DIVERSIONS FROM PARKER CREEK
DIVERSION NUMBER
NAME
CFS
8 to 12 Butler 0 80
13 to 15 Hoffman 3.20
15 Flux 1.38
16 & 17 Bolley 2.08
DIVERSIONS FROM BAXTER CREEK AND PARKER CREEK
SUSAN RIVER WATERMASTER SERVICE AREA
Scale
0 1/8 1

56 94 96 Smith et al. 3 95
57 58 69 72 Smith 7 50
71 75 76 77 78 McClelland 10 75
58 59 60 61 80 81 84 Wapes 13 29
81 82 83 DeWitt Theodore 1 75
85 86 Calif. Dept. of Fish and Game 1 88
90 91 92 Calif. Dept. of Fish and Games & Brown et al 19 20
2 26
0 34
82 87 88 89 91 92 Wells DeWitt 3 75
3 75
97 Tanner 5 00
98 100 Bailey 5 00
101 Honey Lake Ranch 5 00
99 Honey Lake Ranch 7 50
102 5 45
106 109 Tanne 2 55
111
106 107 108 109 111 Roberts 1 80
110 111 Wolf 1 55
110 112 113 114 Calif. Dept. of Fish and Games 3 10
HONEY LAKE
Litchfield
Willow Creek
Tamer Slough
Susan River
Tule Canal
Channel
Flood
Dill
Hartson
Slough
Whitehead
R15E
R14E
Watermaster Installed Recorder Station
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM SUSAN RIVER BELOW WILLOW CREEK
SUSAN RIVER WATERMASTER SERVICE AREA
Scale
0 1/2 1

Diversion Number	Owner	CFS
118, 119	Murrer	2.10*
	Barron	2.10
120	Murrer	1.00*
122-135	Barron	14.90*
136-143, 145	Hansen Ranch	4.90*
144-147	Hagata	2.25*
147, 148	Hagata	1.95*

* Allotment to be measured as the average difference during any seven-day period between the waters available for use on the acreage to be supplied and the water passing off of the acreage

NOTE: The Barron Ranch also diverts from the Old Eagle Lake Canal. It must release to downstream user 38 percent of second priority water available to it over any 7 day period if deficiency exists the Watermaster obtains required flow by increasing Barron Reservoir releases accordingly

▽ Watermaster Installed
Recorder Station

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

DIVERSIONS FROM WILLOW CREEK

SUSAN RIVER WATERMASTER SERVICE AREA

Scale
0 1/2 1

Willow Creek Watermaster Service Area

The Willow Creek service area is situated in Siskiyou County, about 10 miles northeast of Montague. A map showing the Willow Creek stream system, the diversions, and the principal roads in the area is presented in Figure 19, page 175. Willow Creek is the major source of water supply and rises on the west slope of 7,800-foot Willow Creek Mountain east of the service area. It then flows in a northwesterly direction through about 11 miles of rolling hills to its confluence with the Klamath River. The service area is about 8 miles long by 1 mile wide and varies in elevation between about 2,600 and 4,000 feet.

Basis of Service

Willow Creek has had a long history of litigation. However, the present basis of service might be said to have been initiated in 1949 when a civil suit was referred to the Department of Public Works, Division of Water Resources, to act as referee. The matter was never finalized by a decree. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed the Department of Water Resources to supervise distribution of water in accordance with an earlier agreement between the users defining their respective rights. Accordingly, the Willow Creek watermaster service area was created on June 22, 1972, and service began on July 1, 1972.

There are three water users in the service area. Distribution is on a fractional basis until the flow drops to a specified amount below the upper two users. At that time, the total flow is rotated between the upper two users.

Water Supply

The main source of water supply of the Willow Creek stream system is from the melting of snow which accumulates at high elevations on the drainage area during the winter months. The spring flow from the melting snow begins late in March or early April and is almost entirely gone prior to June 1. Thereafter the flow decreases rapidly until about July 1. From that date up to the time fall rains begin, the flow remains at a more or less sustained low-flow stage sufficient for domestic and stockwatering purposes on the two upper ranches only.

Method of Distribution

Both sprinkler and flood irrigation are used in the Willow Creek service area. The upper water user has the option of using gravity diversions for either flood or sprinkler irrigation. The middle user relies entirely on flood irrigation by both of these users. Diversion is accomplished by diverting water into the ditches by temporary rock or gravel dams. The lower user in the area utlizes both flood and sprinkler irrigation during the early season when the supply is abundant. As the supply dwindles, the remaining water is pumped from a sump to the sprinkler system.

1973 Distribution

Watermaster service in the Willow Creek service area began on June 6 and continued until September 30. George H. Pape, Associate Engineer, Water Resources, was watermaster during this period.

Since watermaster service began in 1972 on this creek, there are no records for a basis of comparison of this year's water supply with an average. However, the water users indicated that the supply was far below average.

On June 6 there was still sufficient water to distribute to all three users according to their fractional allotments. On June 13 distribution was started on a

5-day rotation between the two upper users since the lower user's allotment was no longer reaching its place of use. This rotation was continued for the remainder of the season.

Diversion Number
Owner
1A Guardia Pipeline
1 Guardia & Sylva
2.3 Sylva
5.6 Cook
Guardia, Sylva and Cook may divert 1 6 1 6 & 2 3 of the flow respectively except when flow below Sylva Ranch is less than ten(10) inches between July 1 & Oct 15. During such times Guardia and Sylva each may divert the full flow for alternating five day periods
Note: Other diversions exist outside the service area.
Willow Creek
T46N
T45N
R5W
R6W
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT
DIVERSIONS FROM WILLOW CREEK
WILLOW CREEK WATERMASTER SERVICE AREA
Scale of Miles
0
1